Bio-logic Systems Corp®

Scout® Sport System

User's and Service Manual

Copyright © 2003-2004 BIO-LOGIC SYSTEMS CORP

Part Number 590-OAUM03

Revision D

COPYRIGHT © BIO-LOGIC SYSTEMS CORP 2003 is the year that this unpublished work was originally created or revised. BIO-LOGIC SYSTEMS CORP (Bio-logic) owns the right to this work and intends to maintain the contents as a trade secret. Bio-logic may also seek to maintain this work as an unpublished copyright. In the event of an inadvertent or deliberate publication Bio-logic intends to enforce this right under the copyright laws as a published work. Those having access to this work may not copy, use, or disclose the information in this work unless expressly authorized by Bio-logic to do so.

Bio-logic Systems Corp
One Bio-logic Plaza
Mundelein, Illinois 60060-3700
1-800-323-8326
Local Phone: (847) 949-5200 FAX: (847) 949-8615

http://www.bio-logic.com

CE 0197

Authorized Representative:
MDCI
(Medical Device Consultants International)
Arundel House, 1
Liverpool Gardens,
Worthing, West Sussex BN11 1SL, UK.
United Kingdom

PROPERTY OF BIO-LOGIC SYSTEMS CORP
ALL RIGHTS RESERVED

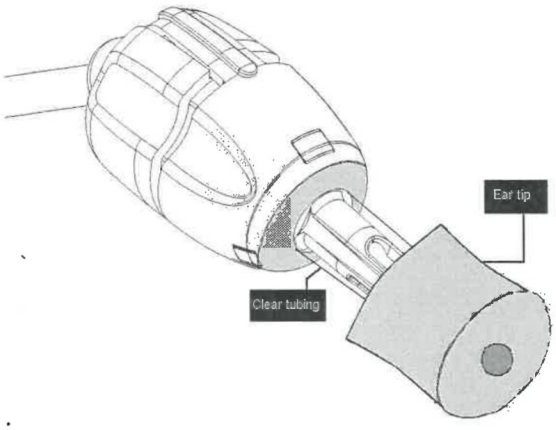
Bio-logic is a registered trademark of Bio-logic Systems Corp
Scout Sport is a registered trademark of Bio-logic Systems Corp
IBM is a registered trademark of the International Business Machines Corporation
Microsoft, Windows, Windows Operating System, and MS-DOS are registered trademarks of Microsoft Corporation

Scout™ DPOAE Quick Guide

Versions 2.01 and higher

Initial startup

Before you start, install a clean probe tip on the end of the probe. Be sure it covers the nozzle completely. To install a new ear tip on the probe nozzle



1. Select an appropriate size ear tip for the patient you are testing.
2. Slide the ear tip fully onto the probe nozzle.
3. Compress the foam tip into a narrow cylinder so that you can insert it deeply into the patient's ear canal.
4. Pull gently on the back of the patient's ear to open the ear canal **AND**
5. Insert the ear tip into the patient's ear canal securely but carefully

:

IMPORTANT NOTE

Ear Tip Positioning and Sizes: probes

Test results improve any time the probe ear tip fits securely into the patient ear canal at the correct depth. Always install a larger ear tip if the current ear tip seems too small for the patient's ear canal, inserts too easily or goes too far into the ear canal.

Superficially positioning the probe ear tip at the opening of the ear canal may cause the probe to fall out during a test or create excessive noise in the recording. At the same time, inserting the probe too deeply into the ear canal may cause patient discomfort.

Entering the Scout program

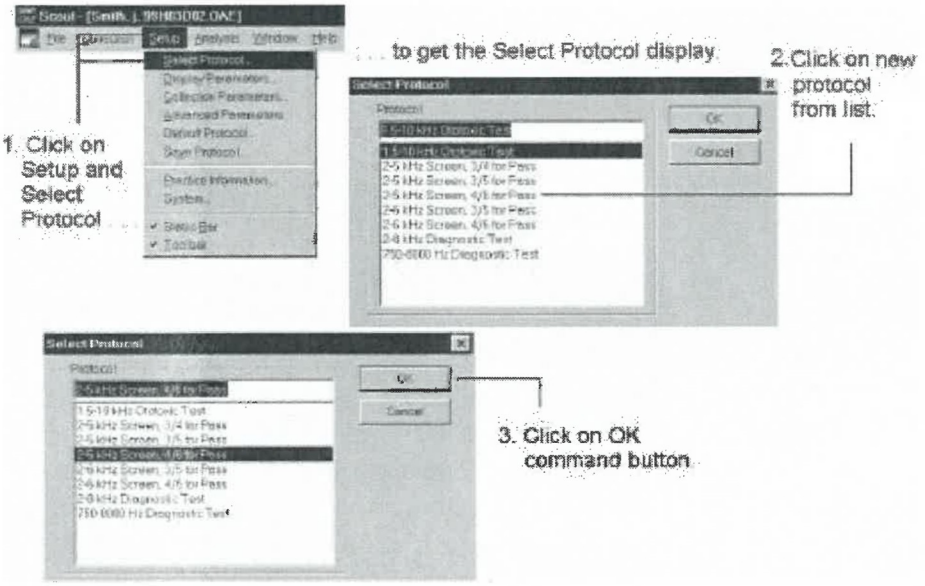
1. Turn the computer on.
2. Allow system to "boot up."
3. Highlight and select (double click on) the Scout DPOAE shortcut icon on the Windows desktop

   OR

4. Select (click on) the Start button on the Windows desktop.
5. Select (click on) the Programs item.
6. Select (click on) the Scout program item.
7. Select (click on) the Scout program icon.

COPYRIGHT © 2003-2004
BIO-LOGIC SYSTEMS CORP

Select a protocol

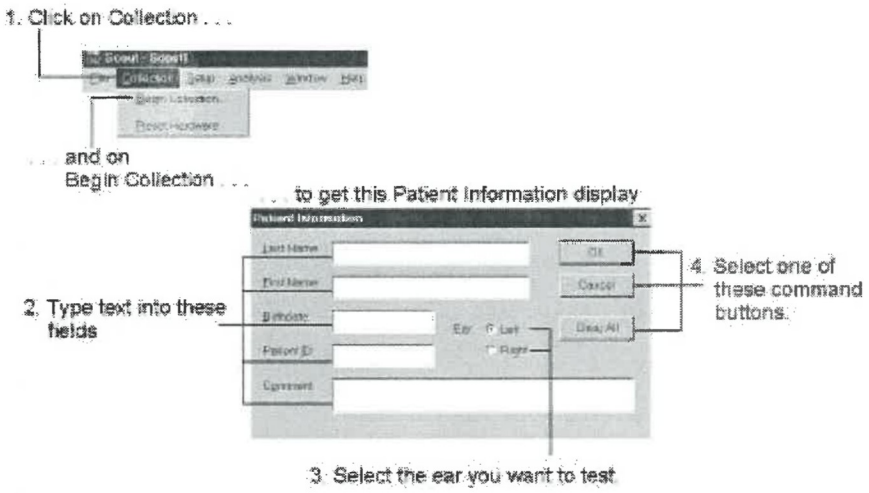

1. Click on Setup and Select Protocol
. . . to get the Select Protocol display
2. Click on new protocol from list.
3. Click on OK command button

1. Select (click on) Setup from the Main Menus.
2. Select (click on) Protocol from the drop-down list.
3. Select (click on) the protocol you want from the list.

   OR

4. Use the up/down arrow keys to move the highlight to the protocol you want.
5. Select (click on) the OK button to load the protocol.

Enter patient information and begin data collection


1. Click on Collection . . .
. . and on Begin Collection . . .
. . . to get this Patient Information display
2. Type text into these fields
3. Select the ear you want to test
4. Select one of these command buttons.

1. Select (click on) File from the Main Menus.
   Select (click on) New Patient File from the drop-down list.
2. Select (click on) Collection from the Main Menus.
3. Select (click on) Begin Collection from the drop-down menu.

   OR

4. Select (click on) the begin R test or the Begin L test icon on the toolbar.
5. Type the patient's last name at the text cursor in the Last Name field.
6. Use the Tab key or click the mouse to place the text cursor in the remaining fields.
7. Type the information you want in the remaining text fields.
8. Select (click on) either the Left or the Right ear radio button.
9. Select (click on) the OK button.

COPYRIGHT © 2003-2004
BIO-LOGIC SYSTEMS CORP

Check fit and calibration

The Scout program automatically performs check fit and calibration procedures. If these are acceptable, the program automatically proceeds with collection. If either calibration or check fit fails, the program gives you the option to abort, retry, or ignore the failure. To continue the test, refit the probe in the patient's ear and select the "retry" option.

DPOAE measurement phase

During this phase, the Scout program automatically measures and averages otoacoustic emissions and displays the DPOAE response. Follow these steps:

1. Wait until the "Save the file . . . Yes . . . No" message appears.
2. Press the Y key to save the data

   OR

3. Press the N key to discard the data.
4. Select (click on) the toolbar icon for the other ear.
5. Wait until testing is complete; save or discard the data.

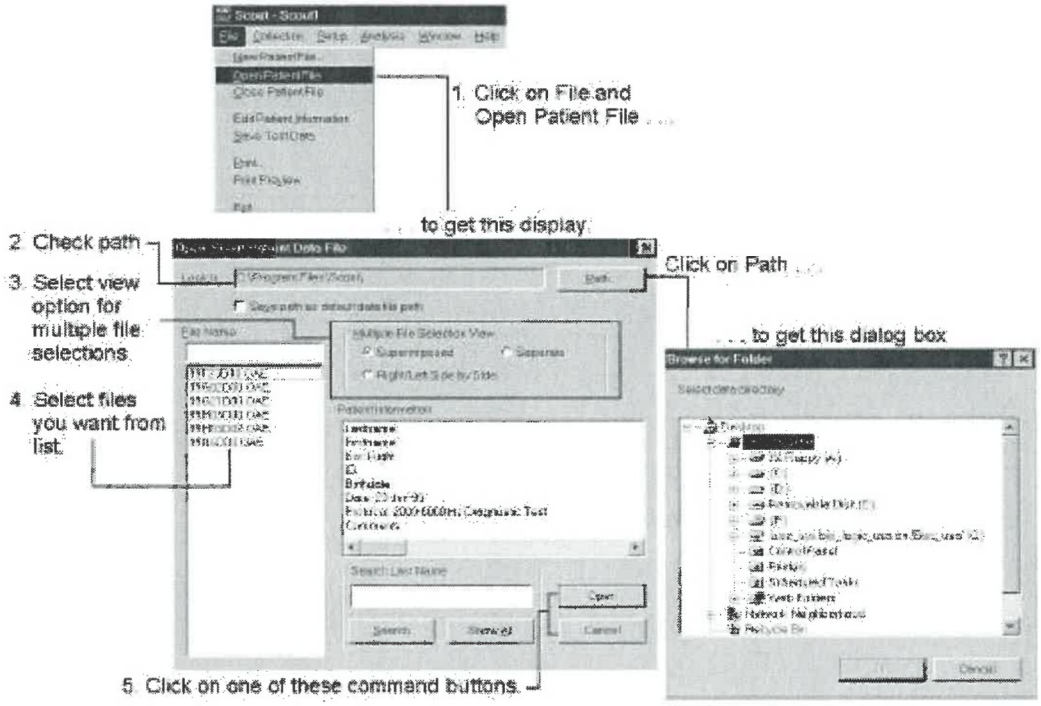
Data analysis

Entering analysis after test

Once testing is complete the DPOAE response remains on the screen. For a DPOAE test, select (click on) one of the datapoints to display Spectral Information to the right and a table of numeric values in the text box above the DPgram.

COPYRIGHT © 2003-2004
BIO-LOGIC SYSTEMS CORP

Loading previously collected files


1. Click on File and Open Patient File . . .
. . . to get this display
2. Check path
3. Select view option for multiple file selections
4. Select files you want from list
Click on Path . . .
. . . to get this dialog box
5. Click on one of these command buttons.

1. Select (click on) File from the Main Menus.
2. Select (click on) Open Patient File from the drop-down list.
3. Make sure the drive path that you want appears in the Look in: field at the top of the display.
4. Click on the view option that you want to use for displaying multiple files in the Multiple File Selection section of the screen.
5. Select (click on) a file in the File Name list.

OR

6. Select (click on) the first or last file you want in a series of files from the list.
7. Press the Shift key and the Up or Down arrow key on the computer's keyboard simultaneously.

OR

8. Press and hold down the Ctrl key on the computer's keyboard.
9. Select (click on) multiple files from the file list (maximum six).

   Note: When you select multiple files, the program displays the patient information for the last highlighted file in the file list.

10. Select (click on) the Open button.

    Note: Users can view a list of all data files for a specific patient by entering the patient's last name in the Search Last Name field and then selecting the Search button. The program displays only data files for patients with that last name in the File Name field. To return to a complete list of available files, select the Show All button.

COPYRIGHT © 2003-2004
BIO-LOGIC SYSTEMS CORP

Printing data

1. Select (click on) File from the Main Menus.
2. Select (click on) Print from the drop-down list.
3. Make sure all menu options are correct; make any changes necessary.
4. Select (click on) the OK button.

Saving data

1. Select (click on) File from the Main Menus.
2. Select (click on) Save Test Data from the drop-down list.

   This lets you save data that was not saved immediately after a test or to save edits to the patient information.

Exiting the Scout program

1. Select (click on) File from the Main Menus.
2. Select (click on) Exit from the drop-down list.

   The program displays the " Are you sure you want to exit the program?" message.
3. Select (click on) Yes to exit the program.

COPYRIGHT © 2003-2004
BIO-LOGIC SYSTEMS CORP

Notes

Use this page for your own notes.

COPYRIGHT © 2003-2004
BIO-LOGIC SYSTEMS CORP

CONTENT

INSTALLATION 1

INSTALLING THE SCOUT SPORT SYSTEM 1

Software Installation 1

Hardware Installation 2

How to connect the Scout Sport to a computer system 5

To connect the Scout Sport or AuDX PLUS to a computer system with the Scout program software: 5

To connect the probe cable assembly to the Scout Sport box: 5

To connect the probe cable assembly to the Scout Sport box: 6

Attaching Foam Ear Tips 7

Ear Tip Positioning and Sizes: Bio-logic probe 8

Removing Foam Ear Tips 9

Attaching Silicone eartips 10

Removing Silicone eartips 10

Cleaning the Probe Nozzle 11

OPERATOR'S GUIDE: TEST PREPARATION 13

How to prepare the patient 13

Tips for Testing Infants and Newborns 14

Test Scheduling and Patient Preparation 14

Screening Tips 14

Minimizing Noise 15

Ensuring a Correct Probe Fit 15

BASIC OPERATING PROCEDURES 17

HOW TO USE THE SYSTEM MOUSE 17

Selecting a menu topic or toolbar button 17

Exiting a display screen 18

Reducing a program display to a screen button 19

Reducing a full size window to a smaller size 19

Restoring a reduced window to its original size 20

Accessing On-line Help with the ? button 21

HOW TO USE THE SYSTEM KEYBOARD 22

Selecting main menu topics with a hot key: 22

Selecting drop-down menu topics with a hot key 22

Moving between main menu topics 23

Moving the highlighter to a specific drop-down menu topic 23

Closing open menus or stopping menu commands 24

Using Hot Keys 24

Copyright © 2003-2004
Bio-Logic Systems Corp

HOW TO USE THE TOOLBAR: GENERAL INSTRUCTIONS 25
Displaying or hiding the toolbar 25
Moving a "floating" toolbar to a new location 26
Moving a "docked" toolbar to a new location 27
Displaying the names of buttons in a program toolbar 27
Executing a program command from a toolbar button 27
OPERATING THE SCOUT PROGRAM 29
HOW TO START THE SCOUT SPORT'S OPERATING PROGRAM 29
Checking the system clock 30
Scout start-up 33
How to use the Begin DPOAE Collection menu item 35
How to begin TEOAE collection 36
How to use the Select Protocol menu item 39
How to use the DPOAE Display Parameters menu item 40
How to use the TEOAE Display Protocol Parameters dialog box 42
To activate the TEOAE Display Parameters dialog box: 42
To use the TEOAE Display Parameters dialog box: 43
How to use the DPOAE Collection Parameters menu item 44
To activate the Collection Setup Parameters display 44
To change test parameters 45
Determining Beginning and Ending F2 Frequency Values 46
Determining L1 and L2 Values 46
Determining the Maximum Number of Data Points per Octave 46
Determining the Point Time Limit 46
Determining the Averaging Time in a Test 47
How to use the TEOAE Collection Parameters dialog box 48
To gain access to the TEOAE Collection Protocol Parameters dialog box: 49
To use the TEOAE Collection Protocol Parameters dialog box: 50
How to use the Advanced DPOAE Parameters item 52
To activate the Advanced Parameters display 52
How to use the Advanced TEOAE Parameters dialog box 54
To gain access to the Advanced TEOAE Parameters dialog box: 54
To use the Advanced TEOAE Protocol Parameters dialog box: 56
How to use the Default Protocol Menu Option 57
How to use the Save Protocol Menu Option 58
To create and save a new protocol by editing and overwriting an existing protocol: 58
To create a new protocol without overwriting the original protocol: 59
How to use the Status Bar Menu Option 60
To display or hide the status bar: 60
How to load New Patient information 62
How to edit a Patient Information display 64
How to open an existing patient file 66

Copyright © 2003-2004
Bio-Logic Systems Corp

How to perform a calibration 68

How to perform an DPOAE measurement 69
For TEOAE 69
How to use the Collection Information windows 70
How to save test data 70

How to preview a patient file you want to print 72

How to set up a printer 74

How to print a patient file 76

How to close a patient file 77

HOW TO ANALYZE DP COLLECTED DATA 79

How to view DPOAE data point information during analysis 80
To view information about individual data points in the DP-Gram 81
To quickly change the display parameters of the current display 82

How to view DPOAE data point spectra during analysis 83

How to view DPOAE test file information during analysis 84

How to exit the Scout program 85

SPECIAL OPERATING PROCEDURES 87

How to use the Reset Hardware menu item 87
To test the serial cable connection between the host computer and a Scout Sport or AuDX PLUS box: 87
To troubleshoot a Reset Hardware error message: 87

How to work with filename codes 89

How to identify a file by its extension 90

HOW TO USE PRE-SET SCREENING DP TEST PROTOCOLS 91

Screening Test Protocol Similarities: 91
Recording/Stimulus Parameters 91
Stopping Rules 91
Pass/Refer Criteria 92

Screening Test Protocol Differences 92
2-5 kHz Screen, 3 of 4 for Pass 92
2-5 kHz Screen, 4 of 6 for Pass 92
2-5 kHz Screen, 3 of 5 for Pass 93
2-6 kHz Screen, 4 of 6 for Pass 93
2-6 kHz Screen, 3 of 5 for Pass 94

HOW TO USE PRE-SET DIAGNOSTIC DP TEST PROTOCOLS 95

Screening Test Protocol Similarities 95

Diagnostic Test Protocol Differences: 96

TE TEST PROTOCOLS 97

TE Screen, 70% at 3/3 freq. for Pass 97

TE Screen, 70% at 3/4 freq. for Pass 100

TE Screen, 70% for Pass at 1.2-3.5 kHz 103

TE Test 104

Copyright © 2003-2004
Bio-Logic Systems Corp

HOW TO IMPORT AUDX PLUS FILES 108
HOW TO USE DPOAE REFERENCE DATA 111
How to use a Reference Set 111
How to create a new DPOAE reference data file 113
TROUBLESHOOTING 117
Calibration Problems 117
To reduce excessive noise during a calibration: 117
To achieve an acceptable calibration result: 117
Data Collection Problems 117
How to correct a Communication Fault message 117
How to correct unacceptable calibration 118
How to cope with excessive noise 118
Troubleshooting the Probe (580-DPOAESM1, 580-DPOAESM2, 580-DPOAESM) 119
Checking the probe cable connection 119
Checking the probe body and flexible tubing 120
Cleaning the probe 121
Checking the speaker module 124
Checking the microphone 125
Performing a biologic check 125
Performing a test using the plastic test cavity 125
DESCRIPTIONS 127
PRODUCT DESCRIPTION 127
Technical description 127
Environmental specifications 127
Scout Sport options 128
Printer 128
Probe Ear Tips for the Bio-logic DPOAE Probe 128
Computer requirements for kit installations 129
Specifications 129
Disposable Probe Ear Tips 130
DESCRIPTIONS: MENUS AND DISPLAYS 131
THE SCOUT START SCREEN: DPOAE TESTS 131
THE SCOUT START SCREEN: TEOAE TESTS 134
The Main Menus: illustrated descriptions 136
The File menu 137
The New Patient file item 139
The Open Patient File item 140
The Edit Patient Information item 143
The Save Test data item 144
The AuDX link import item 146
The Clear AuDX Data item 147
The Print item 148
The Print Preview item 150

Copyright © 2003-2004
Bio-Logic Systems Corp

The Collection menu **152**
The Begin Collection item 152
— For TEOAE tests 153
The Reset Hardware item 153

The Setup menu **154**
The Select Protocol item 156
The DPOAE Display Parameters item 158
The DPOAE Collection Parameters item 162
The DPOAE Advanced Parameters item 166
TEOAE Display Parameters Setup 168
TEOAE Collection Parameters Setup 169
TEOAE Advanced Parameters Setup 176
The Default Protocol item 178
The Save Protocol item 179
The Practice Information item 181
The System (setup) item 182
The Status Bar item 184
The Toolbar and its icons 186

The Analysis menu **187**

The Window menu **188**

The Help menu **189**

Display Screen Layouts **190**
The DPOAE Calibration Stimulus Waveform Window 190
The TEOAE Calibration Stimulus Waveform Window 191
The DPOAE Distortion Product (DP) Graphic Display 192
The DPOAE F1 Intensity (L1) Graphic Display 192
The DPOAE F2 Intensity (L2) Graphic Display 192
The TEOAE Response Spectrum Display Area 193
The TEOAE Response Temporal Waveform Display Area 194
DPOAE Text Information Window 195
TEOAE Text Information Window 195
The Main Graphics Display Window 196
The DPOAE Noise Floor (NF) Graphic Display 197
The Plot Symbol Key 197
The DPOAE Response Spectrum Display Area 198
The TEOAE Response Spectrum Display Area 198
The status Information area 199
The Stimulus Spectrum Display Area 199
The DP Amplitude Reference Set 199
The NF Amplitude 199

The Page Through command buttons **200**

LCD Messages **201**

DESCRIPTIONS: REFERENCE DATA FILE FORMATS **203**

DPOAE REFERENCE DATA FILE FORMATS **203**

The Vanderbilt 65/55, 95-5th Percentile Reference Set **204**

The Vanderbilt 65/65, 95-5th Percentile Reference Set **205**

The Vanderbilt 65/55, 2 St. Dev. Reference Set **206**

The Vanderbilt 65/65, 2 St. Dev. Reference Set **207**

Copyright © 2003-2004
Bio-Logic Systems Corp

The Boys Town 65-55 Reference Set 208
The Expanded Boys Town Reference Data Set 209
The DP Reference Data set 210
Program Symbols and Abbreviations 211
APPENDIX A 215
Precautions and Safety Instructions 215
Equipment Identification Label and Markings 216
Classification 216
Warning Labels and Symbols 216
Electrical Installation Requirements 217
Grounding Requirements 217
Power Plug Requirements 217
Types of Hospital Facility Groundings 218
Hazards of Improper Electrical Installations 218
ENVIRONMENTAL SPECIFICATIONS 219
Temperature 219
Humidity 219
Condensation 219
Flammability 219
EMC Specifications 219
INSTALLATION PRECAUTIONS 220
Environmental Conditions 221
Room Topography 221
INSTALLING THE SCOUT SPORT SYSTEM 222
Software Installation 222
Hardware Installation 222
System Hookups 223
Installation Verification 224
System Diagnostic and Verification Tests 224
PRECAUTIONS DURING SYSTEM OPERATION 225
Signal Output and Input 226
Care and Maintenance 226
Cleaning 227
Inspection 227
Disassembly and Storage 227
Maintenance 227

Copyright © 2003-2004
Bio-Logic Systems Corp

APPENDIX B **228**
Electrical Requirements 228
Isolated or non-isolated power 228
15 or 20 amps 228
BTU Offset 228
Magnetic Field 228
Room Shielding 228
Fluorescent Lights 229
Thickness of the Conduit 229
INDEX **231**

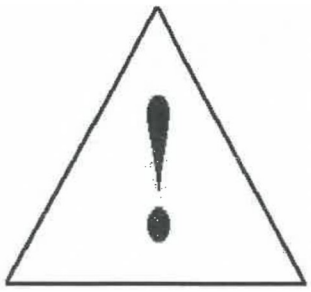
Copyright © 2003-2004
Bio-Logic Systems Corp

Copyright © 2003-2004
Bio-Logic Systems Corp

INSTALLATION

Installing the Scout Sport system

As part of the purchase price for your Scout Sport system, you are entitled to installation and one training session from your local Bio-logic Systems Corp. representative. Make contact with your local representative when you receive your system to schedule installation and training. If you do not know your local representative, please phone our Customer Support Department at 800-323-8326.



CAUTION

This system is intended for use as a medical instrument only. The software installed on this system has been verified and validated for that use, as long as no other unintended or unauthorized software is running at the same time. Do not install, download, save, or transfer other programs, software, or data on this equipment without first consulting Bio-logic Systems Corp. Doing so may interfere with the proper operation of this software.

Software Installation

If you purchased a complete Scout Sport system, including the computer, then the software is already installed at the time of delivery. However, if you purchased a kit and are using it with a computer that you supplied through a separate purchase, your Bio-logic representative will install the software for you. Refer to the Computer requirements for kit installations section of this document and verify that your computer meets these minimum specifications. If it does not meet these requirements, your kit may not function properly.

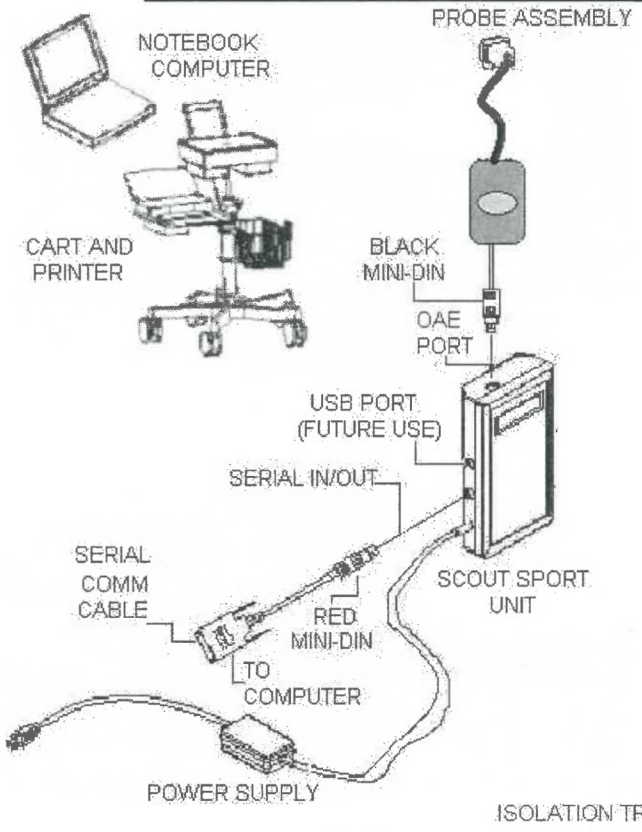
Note: Bio-logic Systems Corp. is not responsible for resolving incompatibilities between the kit and a computer that does not meet the minimum computer specifications.

Copyright © 2003-2004
Bio-Logic Systems Corp

Hardware Installation

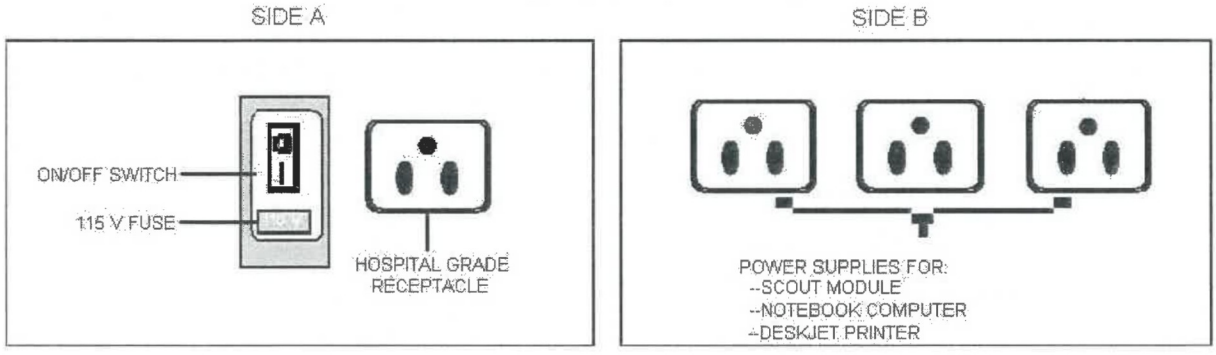
WARNING

Each of the colored plastic housings on the cables displays arrows that identify the top of the connector. This helps align the cable connector male plug to the female jack on the side of the Scout Sport system module. Careful alignment of the cable plug to the jack is important to reduce the chance of bending the metal pins inside the male connector. You must insert the plugs completely into the corresponding jacks for the system to operate properly. Never twist these connectors during insertion or removal. Twisting the connector in the socket may damage the metal pins and cause communication problems between the Scout Sport system module and the computer. It may also cause other system malfunctions involving stimulus delivery or Scout Sport system recording.



CONNECTION SCHEME FOR SCOUT SPORT SYSTEM

ISOLATION TRANSFORMER



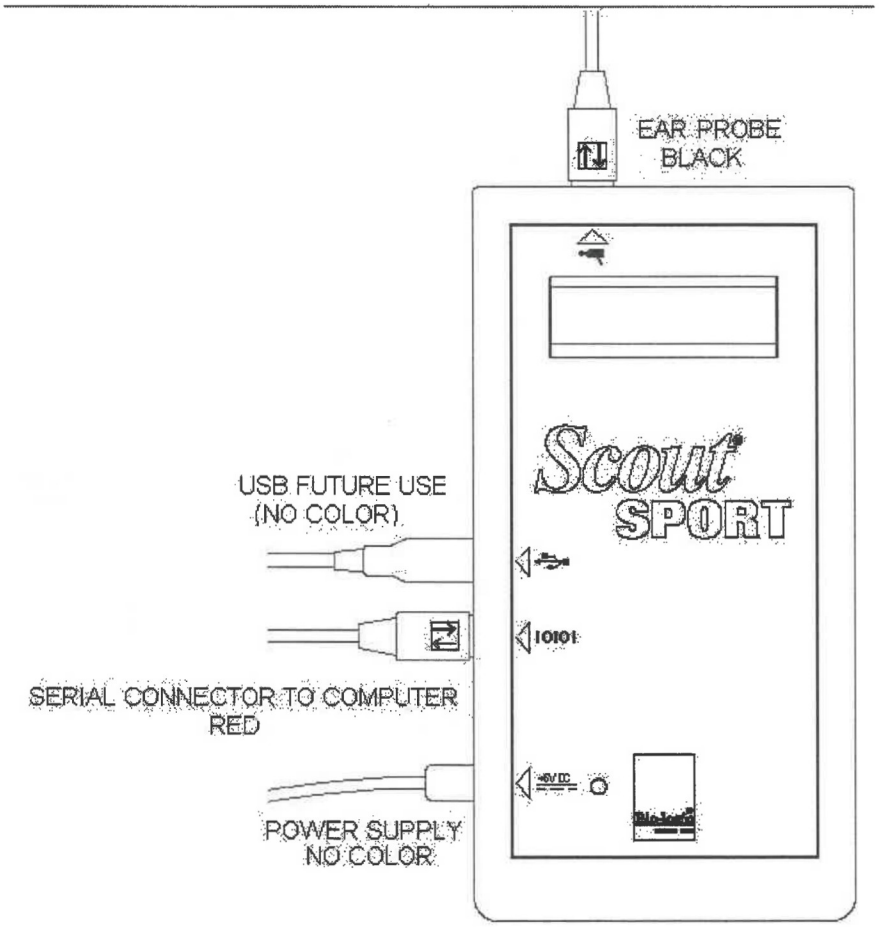
Copyright © 2003-2004
Bio-Logic Systems Corp

WARNING

Make sure that any platform, table, cart, or other surface used during the operation, transport, or temporary or permanent storage of the system and its components is adequate, sturdy, and safe. Bio-logic Systems Corp. is not responsible for any injury or damage that may result from inadequate, poorly constructed, or unapproved transports, carts, operating surfaces.

Hardware installation of the Scout Sport system involves connecting several cables to the Scout Sport module. RS232 female connectors are on two sides of the Scout Sport module. Each of these connectors has a different pin configuration. This reduces the risk of plugging the wrong cable into the connector. Additionally, colored rings around the connector sockets on the sides of the Scout Sport module match the color of the plastic housing around the RS232 male connector end of the cable.

This figure shows color-coding for the connectors on the Scout Sport module and cables:



Note: This illustration shows items only for Scout Sport systems. For other systems, please make contact with Bio-logic Systems Corp. Customer Support at 1-800-272-8075.

Copyright © 2003-2004
Bio-Logic Systems Corp

INSTALLATION

Once the cable connections are made into the Scout Sport module, additional connections must be made to complete the hardware installation. Insert the 9-pin D connector (female) end of the communication cable into the available communication port of the computer. The location and labeling of the port on the computer varies. On a desktop or tower computer, the communication port is typically on the back with all of the other connectors. On a laptop computer, the communication port may be on either side or on the back. If you purchased the computer from Bio-logic Systems Corp., a small label will be adhered adjacent to the connector. If you provided the computer, consult the manual that accompanied the computer to locate the communication port. Rarely, communication ports have a 24-pin D connector rather than a 9-pin connector. When this occurs, you must use a 9-pin to 24-pin female adapter to connect the communication cable to the computer's communication port.

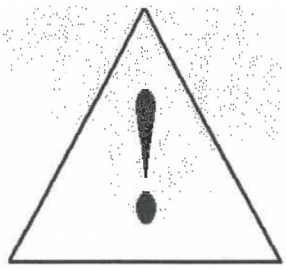
Copyright © 2003-2004
Bio-Logic Systems Corp

How to connect the Scout Sport to a computer system

This topic explains how to connect the Scout Sport or AuDX PLUS box to a computer system with Scout software. Verify all connections are correct before continuing.

To connect the Scout Sport or AuDX PLUS to a computer system with the Scout program software:

1. Align the connector end of the communication cable with the appropriate connector on the left side of the Scout Sport/AuDX PLUS box.



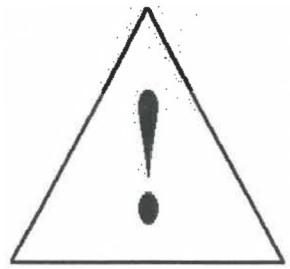
CAUTION

MAKE SURE THAT THESE CONNECTORS ARE CORRECTLY ALIGNED. IMPROPER ALIGNMENT MAY DAMAGE THE DEVICE. MAKE SURE THAT YOU HAVE IDENTIFIED THE CORRECT COMMUNICATION PORT IN THE SCOUT PROGRAM. NOTE: IF THE CABLE HAS AN ARROW ON IT, ALIGN THE ARROW TO THE TOP OF THE BOX.

2. Slide the cable connector completely into the connector on the Scout Sport/AuDX PLUS box.
3. Make sure that the connector is secure.
4. Check the rear panel of the computer to find a free communication port.
5. Insert the connector at the opposite end of the communication cable into the appropriate communication port on the system computer.

To connect the probe cable assembly to the Scout Sport box:

1. Align the pins inside the probe cable connector to the pins inside the connector at the top of the Scout Sport box.



CAUTION

MAKE SURE THAT THESE CONNECTOR PINS ARE CORRECTLY ALIGNED. IMPROPER ALIGNMENT MAY DAMAGE THE DEVICE. NOTE: IF THE CABLE HAS AN ARROW ON IT, ALIGN THE ARROW TO THE TOP OF THE BOX.

2. Slide the probe cable connector completely into the Probe connector on the Scout Sport box.
3. Make sure that the connector is secure.

For more information, turn to:

The Scout start screen

Copyright © 2003-2004
Bio-Logic Systems Corp

To connect the probe cable assembly to the Scout Sport box:

1. Align the pins inside the probe cable connector to the pins inside the connector at the top of the Scout Sport box.

CAUTION

MAKE SURE THAT THESE CONNECTOR PINS ARE CORRECTLY ALIGNED. IMPROPER ALIGNMENT MAY DAMAGE THE DEVICE. NOTE: IF THE CABLE HAS AN ARROW ON IT, ALIGN THE ARROW TO THE TOP OF THE BOX.

2. Slide the probe cable connector completely into the Probe connector on the Scout Sport box.
3. Make sure that the connector is secure.

For more information, turn to:

The Scout start screen

Copyright © 2003-2004
Bio-Logic Systems Corp

Attaching Foam Ear Tips

Place the clear tube slightly onto the nozzle of the probe body.

Using your fingertip, continue pushing on the top of the foam until the clear tube covers the entire nozzle.

The end of the clear tube of the ear tip should cover the nozzle completely leaving no gap at the base.

(Do not pinch foam while attaching ear tip onto the nozzle.)

To install a new foam ear tip on the probe nozzle, follow these steps:

1. Select an appropriate size ear tip for the patient you are testing.

2. Slide the ear tip fully onto the probe nozzle as follows

   —Place the opening of the clear tubing over the tip of the probe nozzle.
   —Push the foam end of the ear tip until until the clear tube covers the grooved nozzle and fits into the body of the probe.

Note: The new probes have three (3) grooves for easy cleaning. The disposable ear tip fits tightly over these grooves to form the outer wall of the mic and speaker channels. For TreeTip ear tips, slide the TreeTip onto the probe nozzle until you meet resistance. Then, use your fingertips around the thickened ring at the base of the TreeTip to slide it completely onto the nozzle.

3. Compress the foam tip into a narrow cylinder so that you can insert it deeply into the patient's ear canal.

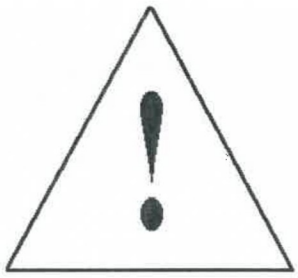
Note: Do not, however, pinch the foam while attaching the ear tip to the nozzle.

Copyright © 2003-2004
Bio-Logic Systems Corp

4. Pull gently on the back of the patient's ear to open it

   AND

5. Insert the ear tip into the patient's ear canal securely but carefully



IMPORTANT NOTE

Ear Tip Positioning and Sizes: Bio-logic probe

Test results improve any time the probe ear tip fits securely into the patient ear canal at the correct depth. Always install a larger ear tip if the current ear tip seems too small for the patient's ear canal, inserts too easily, or goes too far into the ear canal.

Superficially positioning the probe ear tip at the opening of the ear canal may cause the probe to fall out during a test or create excessive noise in the recording. At the same time, inserting the probe too deeply into the ear canal may cause patient discomfort.

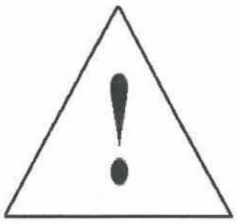
For more information, turn to these topics:

Tips for Testing Infants and Newborns

How to connect the Scout Sport to a computer system

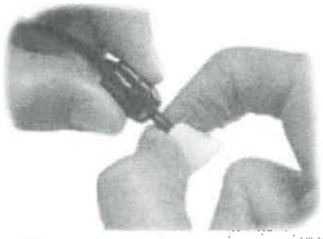
Copyright © 2003-2004
Bio-Logic Systems Corp

Removing Foam Ear Tips



CAUTION

AVOID PULLING ON THE FOAM WHEN YOU REMOVE THE EARTIP. THIS CAUSES THE TUBE TO CREATE SUCTION AROUND THE GROOVES IN THE NOZZLE. DAMAGE TO PROBE IS POSSIBLE.



To remove foam tips, hold the probe body with your fingers on top of the nozzle clips. Then, with the other hand, place your fingernails behind the clear tube at the base of the nozzle and slide the tube toward the end.

Do not pull on the foam. This will cause suction of the tube around grooves in the nozzle and will actually impede the removal.

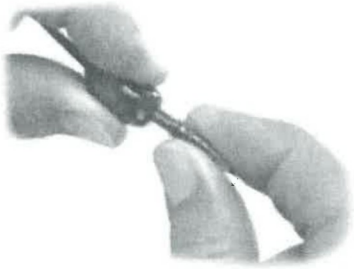
You may end up pulling the foam off of the clear tube while the tube remains on the nozzle.

To remove the foam eartip:

1. Grasp the body of the probe with your fingertips on top of the nozzle clips..
2. Place the nails of your other hand behind the clear tube at the base of the nozzle.
3. Slide the tube toward the end.

Copyright © 2003-2004
Bio-Logic Systems Corp

Attaching Silicone eartips



Slide ear tip onto the probe nozzle until you meet with resistance. Then place your fingernails behind the thickened ring around the base of the tip and slide the tip on until it is all the way on the nozzle.

Correct Ear Tip Placement

Incorrect Ear Tip Placement (base-end of the ear tip is not flush against base of nozzle)

To install a new silicone ear tip on the probe nozzle, follow these steps:

1. Slide the eartip onto the probe nozzle until you meet with resistance.
2. Place your fingernails behind the thickened ring.
3. Slide the tip onto the probe until the base-end of the eartip is flush against the base of the nozzle.

Removing Silicone eartips

To remove the silicone eartips:

1. Hold the body of the probe on top of the nozzle clips.
2. Place the fingernails of your other hand at the base of the eartip.
3. Slide the eartip off the nozzle.

Copyright © 2003-2004
Bio-Logic Systems Corp

Cleaning the Probe Nozzle

See the Troubelshooting section of this document.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Us this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

OPERATOR'S GUIDE: TEST PREPARATION

How to prepare the patient

The way you prepare a patient can affect the integrity of OAE test results. Although the Scout Sport is capable of accurately testing any age group, use these steps to be sure that the test results are correct.

To obtain accurate OAE test results:

1. Make sure that:

   —The probe tip is clean

   —The probe tip is the correct size for the ear you are testing

   —You have installed the probe tip correctly and completely on the probe end.

   —The test subject's ear is free of cerumen

2. Compress the foam tip into a narrow cylinder so that you can insert it deeply into the patient's ear canal.
3. Pull gently on the back of the patient's ear to open it

   AND
4. Insert the ear tip into the patient's ear canal securely but carefully.
5. Make sure that the probe tip is securely in place.
6. Clip the probe's cord to the patient's clothing as close to the ear as possible.

   This stabilizes the probe.
7. Keep the patient as still as possible during the test.

For more information, turn to these topics:

Tips for Testing Infants and Newborns

Copyright © 2003-2004
Bio-Logic Systems Corp

Tips for Testing Infants and Newborns

This topic has additional information and solutions for accurate infant and newborn hearing test results. These tips should help you get more accurate test results without excessive re-screening.

Test Scheduling and Patient Preparation

- Residual debris in the newborn's ear canal can sometimes create poor test results. To obtain more accurate test results, perform any pre-discharge screenings closer to the time of discharge.
- Testing is more successful when the baby is comfortable and sleeping. To obtain more accurate test results, perform the screening shortly after feeding and changing the baby.
- Swaddle the baby to minimize any arm movements (these can jar the probe). Make sure that the swaddling material folds away from the ears or probe.
- Lay the baby on his/her side with the test ear facing up. When the probe is securely inserted, gravity helps maintain the probe's original position.

Screening Tips

Newborn ear canals are highly cartilaginous and can easily collapse or become partially "closed." This is especially true if the baby is lying on the test ear. Also, residual debris and vernix can remain in the ear canal for hours after birth. Such debris can partially occlude the ear canal. To "open" an ear canal before a screening:

1. Grasp the ear gently but firmly.
2. Manipulate it in a circular motion while pulling it slightly away from the head.

   This procedure may awaken the baby. Make sure that you avoid causing the baby discomfort.

Because inserting an ear tip during the first screening often begins to open a collapsed or occluded ear canal, make sure you keep the ear scheduled for re-screening up. If you must rescreen both ears, turn the baby from one side to the other at regular intervals. Wait one hour or longer before attempting to re-screen an ear(s) that has referred.

Ask nursing personnel to habitually change the baby's position from one side to the other. This prevents the same ear from being down on the bedding for extended periods of time. The "down" ear may often achieve a poor test result because it has either collapsed or become partially occluded with vernix.

Copyright © 2003-2004
Bio-Logic Systems Corp

Minimizing Noise

- Reduce background noise in the test environment as much as possible. Turn off radios and other unnecessary sources of noise.
- Reduce the amount and level of conversation during a test. If noise in the test room is unavoidable, move the baby to a quieter room (such as a vacant patient room or a breast-feeding room).
- If the baby wakens during ear manipulation or probe insertion, quiet the baby before continuing with the test. Although a pacifier can be useful, any constant or vigorous sucking may prolong the test or introduce noise into the recording. Successful testing is more likely to occur if sucking is intermittent or absent. Begin screening when the baby has quieted down.

Ensuring a Correct Probe Fit

CAUTION

NEVER INSERT A PROBE INTO THE PATIENT'S EAR WITHOUT INSTALLING A DISPOSABLE EAR TIP ON THE PROBE'S NOZZLE. WITHOUT AN EARTIP IN PLACE, THE NOZZLE CAN SCRATCH THE SKIN IN THE EAR CANAL OR, IF THE BABY HAS A VERY SHORT EAR CANAL, DAMAGE THE EARDRUM.

Probe fit is critical to successful DPOAE testing. To use and insert the probe appropriately, follow these steps:

1. Compare the opening of the ear canal with the sizes of the available ear tips.
2. Select a tip that is approximately the same diameter or slightly larger than the ear canal.

   The TreeTip disposable ear tip fits a wide range of infant ear canal sizes.
3. Install a disposable ear tip over the probe's nozzle (see **CAUTION** above).
4. Make sure that the base end of the ear tip extends fully over the probe nozzle.
5. Make sure that the ear tip end covers all hard surfaces and that no hard surface can touch the ear canal.

   All disposable ear tips extend beyond the metal tubes by approximately 1/16th inch.
6. Pull the ear outward gently but firmly.

   This opens the ear canal.
7. Insert the probe tip into the ear canal gently but securely with a slight, twisting motion.

Copyright © 2003-2004
Bio-Logic Systems Corp

8. Check that the ear tip is correctly positioned.

9. Release the ear and then gently let go of the probe.

Note: Do not attempt to hold the probe in place during a test. Even a small movement may generate noise in the ear canal and alter the test results.

Note: Bio-logic DPOAE ear tips are only for single-patient use. To prevent the spread of infection, always discard used tips immediately.

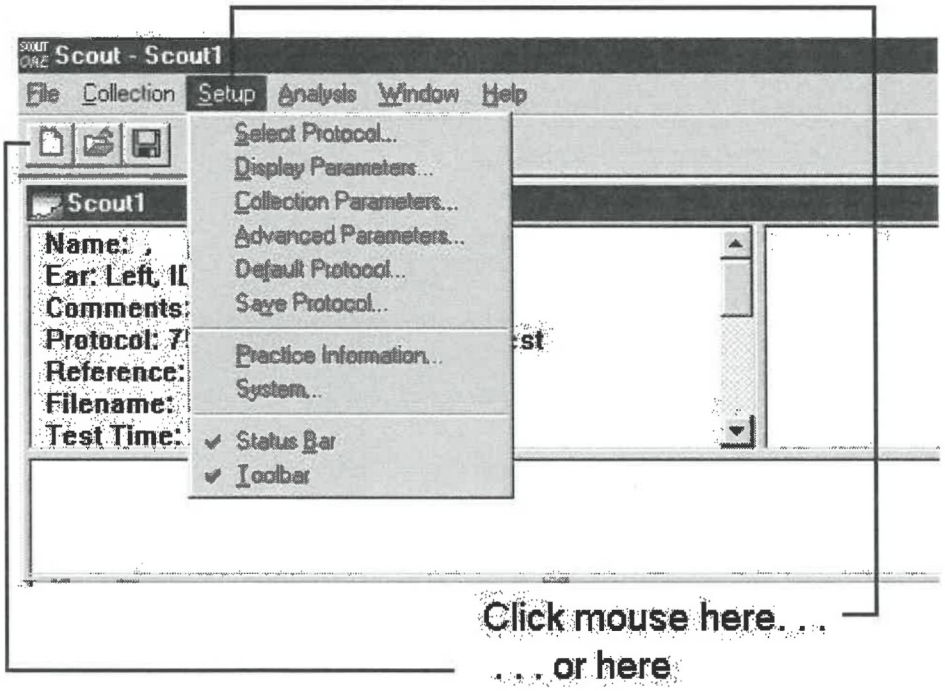
Copyright © 2003-2004
Bio-Logic Systems Corp

BASIC OPERATING PROCEDURES

How to use the system mouse

The mouse lets you quickly select menu topics and buttons from the program screen. Each time users move the mouse over a flat surface, the mouse cursor mirrors the movement on the display screen. By positioning the cursor on specific items and clicking the left or the right mouse button, users can select menu options, analyze raw data, print files, and open or close program menus.

Selecting a menu topic or toolbar button

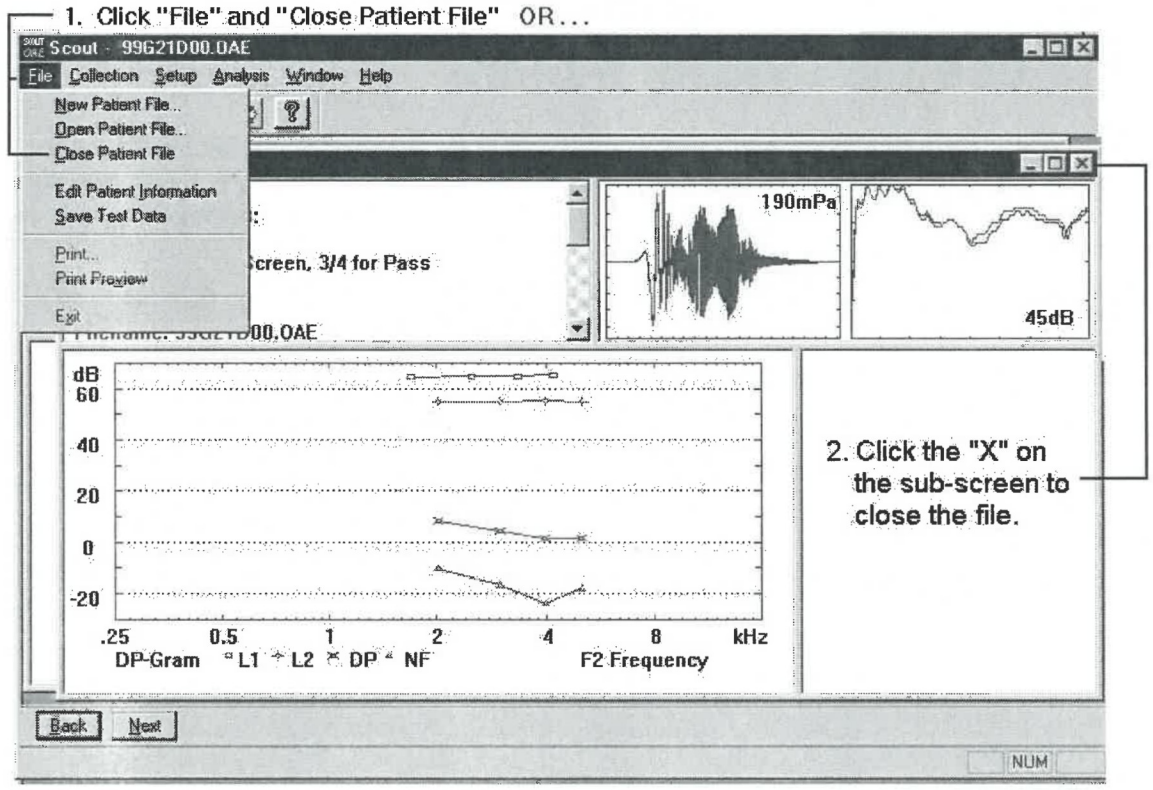


To select a menu topic or toolbar button:

1. Position the mouse cursor on the menu topic or toolbar button that you want to use.
2. Click the left mouse button.

Copyright © 2003-2004
Bio-Logic Systems Corp

Exiting a display screen



To exit a display, Help topic, or program window:

1. Position the mouse cursor over the X button in the upper, right corner of the display.

   Use the "X" button at the topmost right to close the main program and all other Scout files you might have open. All other "X" buttons close subscreens or files.

2. Click the left mouse button.

   The program closes the display screen.

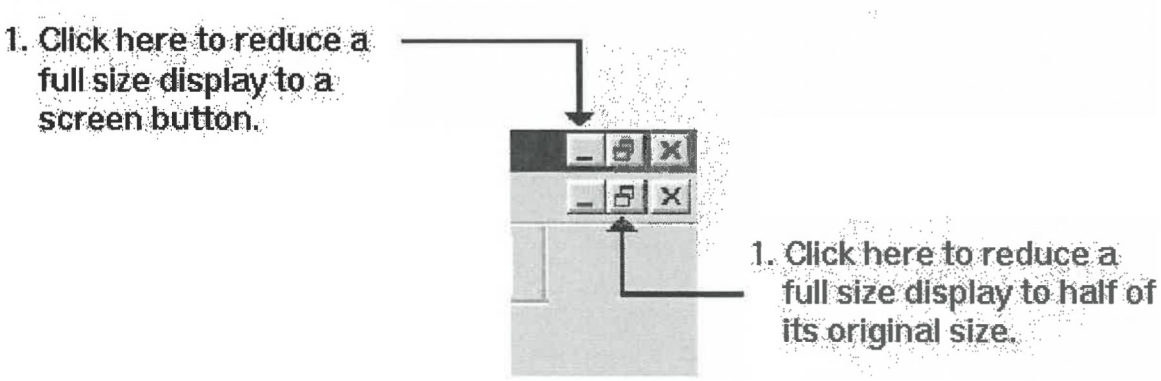
   OR

3. Select (click on) File and Exit.

   This closes the main program and any other Scout files you may have open.

Copyright © 2003-2004
Bio-Logic Systems Corp

Reducing a program display to a screen button


1. Click here to reduce a full size display to a screen button.
1. Click here to reduce a full size display to half of its original size.

To reduce a program display to a screen button:

1. Position the mouse cursor on the - button in the upper, right corner of the program display.
2. Click the left mouse button.

   The Windows Operating System reduces the window to a program display.

Reducing a full size window to a smaller size

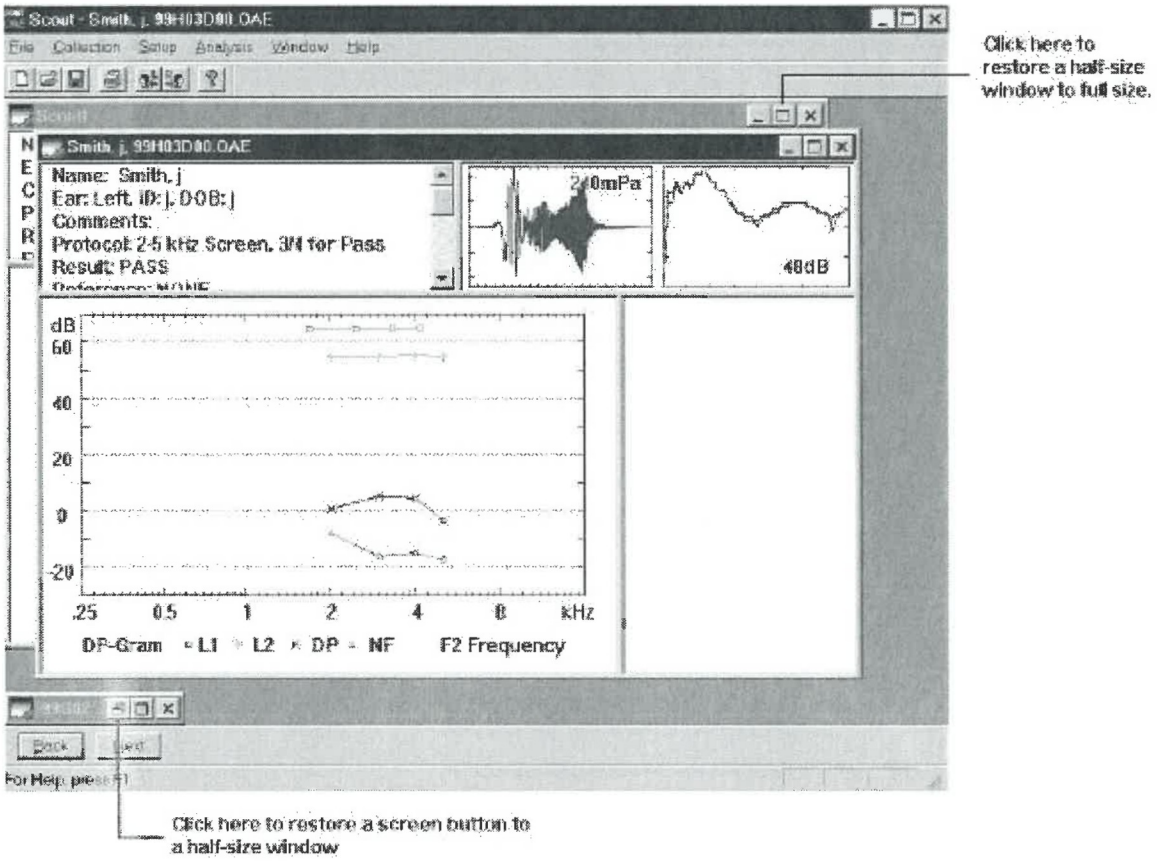
To reduce a full size window to a previously-set smaller size:

1. Position the mouse cursor on the Maximize button.
2. Click the left mouse button.

   The Windows Operating System reduces the window to a smaller size. (This smaller size is approximately one-half its full-screen size by default.)

Copyright © 2003-2004
Bio-Logic Systems Corp

Restoring a reduced window to its original size



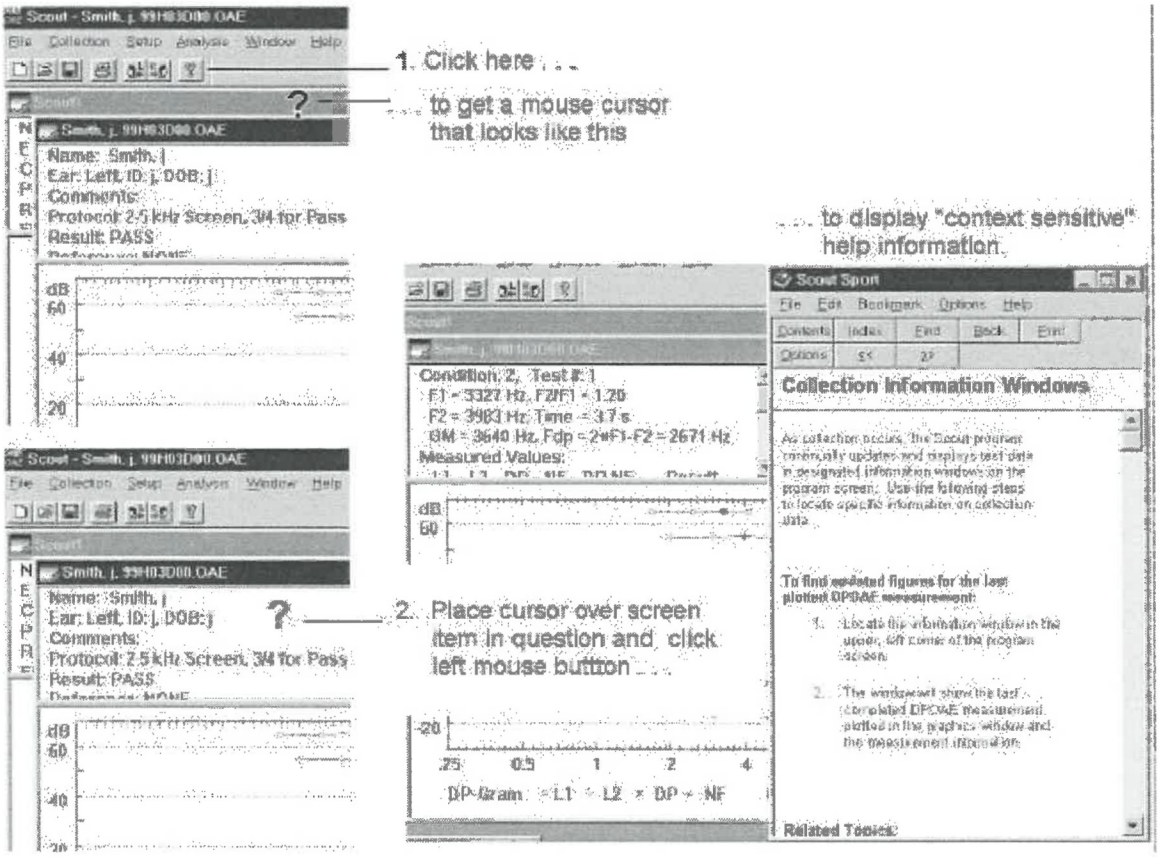
To restore a reduced window to its original size:

1. Position the mouse cursor on the Maximize button.
2. Click the left mouse button.

   The Windows Operating System restores the window to its original size.

Copyright © 2003-2004
Bio-Logic Systems Corp

Accessing On-line Help with the ? button


1. Click here . . .
. . . to get a mouse cursor that looks like this
. . . to display "context sensitive" help information.
2. Place cursor over screen item in question and click left mouse button . . .
Collection Information Windows

To access On-line Help using the ? button:

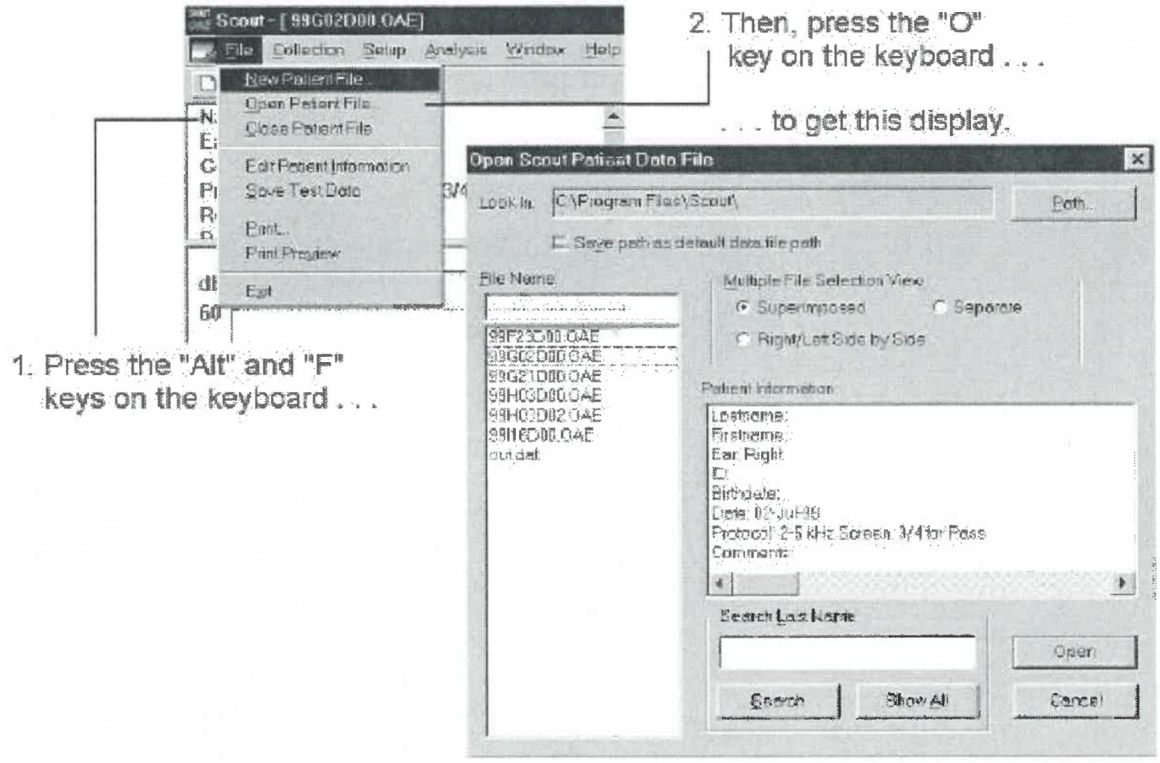
1. Position the mouse cursor on the ? button
2. Press and release the left mouse button.

   The cursor changes to a Help cursor.

   Note: This feature is not available in all windows.
3. Position the Help cursor on the topic or button you want.
4. Press and release the left mouse button to activate Help information on the selected item.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the system keyboard



Although the system keyboard is essential for entering patient information, users can also quickly open, close, activate, and edit dialog menus and screens with pre-programmed hot keys.

Selecting main menu topics with a hot key:

To select main menu topics with a hot key:

1. Simultaneously press the Alt key and the key corresponding to the underlined letter in the main menu topic.

   The program opens a drop-down menu or executes the indicated command.

Selecting drop-down menu topics with a hot key

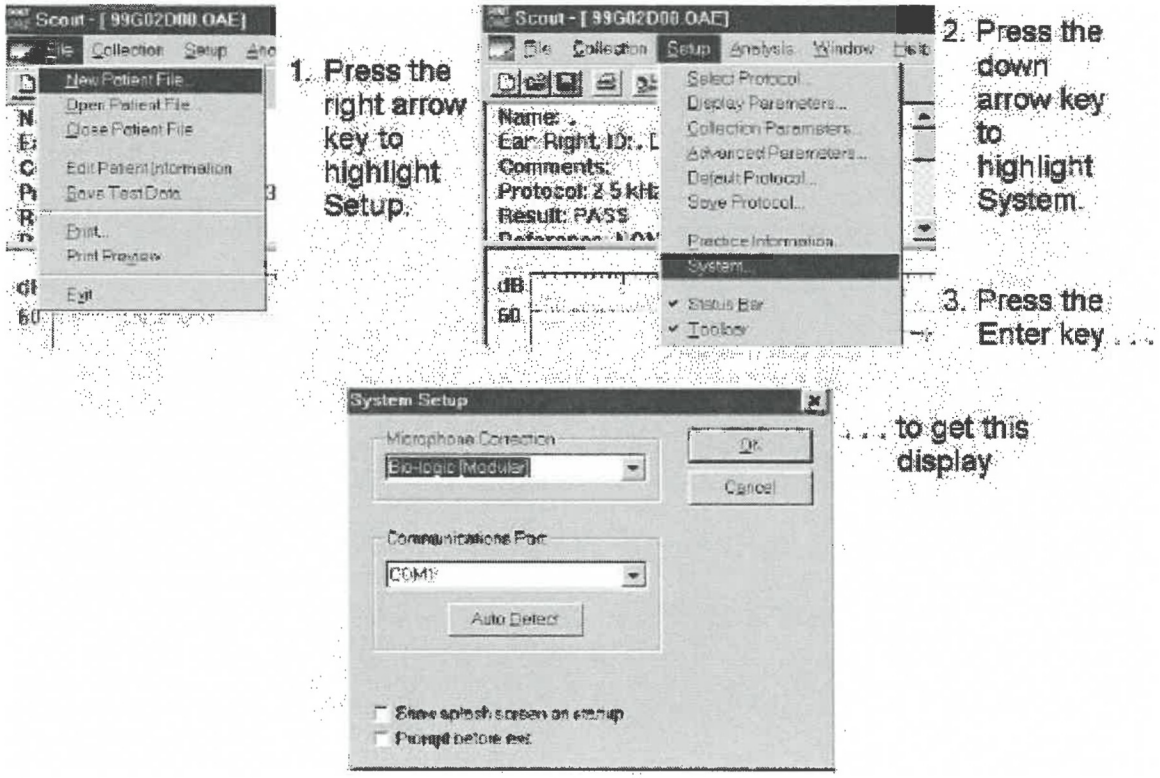
To select drop-down menu topics with a hot key:

1. Press the key corresponding to the underlined letter in the drop-down menu topic.

   The program executes the command.

Copyright © 2003-2004
Bio-Logic Systems Corp

Moving between main menu topics



To move between main menu topics:

1. Verify a main menu topic is highlighted.
2. Press the left or right arrow key to move the highlighter in the direction indicated by the arrow.

   The program automatically displays the drop-down menu for each highlighted main menu topic at the same time.

Moving the highlighter to a specific drop-down menu topic

To move the highlighter to a specific drop-down menu topic:

Note: This function works in an activated drop-down menu:

1. Press the up or down arrow key to move the highlighter in the direction indicated by the arrow.
2. Continue step 1 until the highlighter reaches the menu topic you want.
3. Press the Enter key to execute the selected command.

Copyright © 2003-2004
Bio-Logic Systems Corp

Closing open menus or stopping menu commands

To close open menus or stop menu commands:

1. Press the Esc key.

   The program closes the open menu or stops executing the menu command.

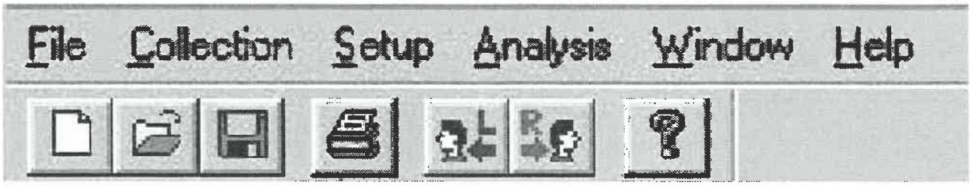
Using Hot Keys

Although the Scout Sport program automatically performs and plots DPOAE measurements, users can press the following "hot keys" to alter a specific program function during a patient test.

- Press the P key or the F9 key to temporarily suspend the test.
- Press the Esc key to terminate the test without discarding recorded measurements.
- Press the B key to terminate the current stimulus condition and revert to the previous condition. If necessary, continue pressing the B key to move backward to earlier conditions.
- Press the N key to end the current stimulus condition early and proceed to the next condition.
- Press the right or left arrow key to adjust the artifact rejection threshold limit either up or down in 1 mPa increments.
- Press the up or down arrow keys to adjust the artifact rejection threshold limit either up or down in 10 mPa increments.
- Press the End key one or more times to set an artifact rejection threshold limit equal to the maximum level for the current set of sweeps.

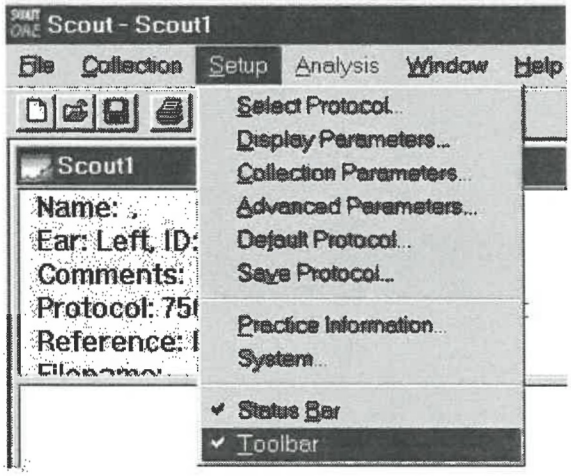
Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the toolbar: general instructions



The Scout toolbar contains control buttons you can use to operate the program. You can display or hide this toolbar, "float" it anywhere in the display window, or "dock" it at the top of the program screen. General instructions for the use of the toolbar follow. For descriptions of the icons in the toolbar, turn to "The Toolbar and its icons."

Displaying or hiding the toolbar



Click on Setup . . .

. . . then click on Toolbar to show (checked) or hide (unchecked) the Toolbar and its icons.

To display or hide toolbars on the program screen:

1. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) the Toolbar item from the drop-down list.

   The program:

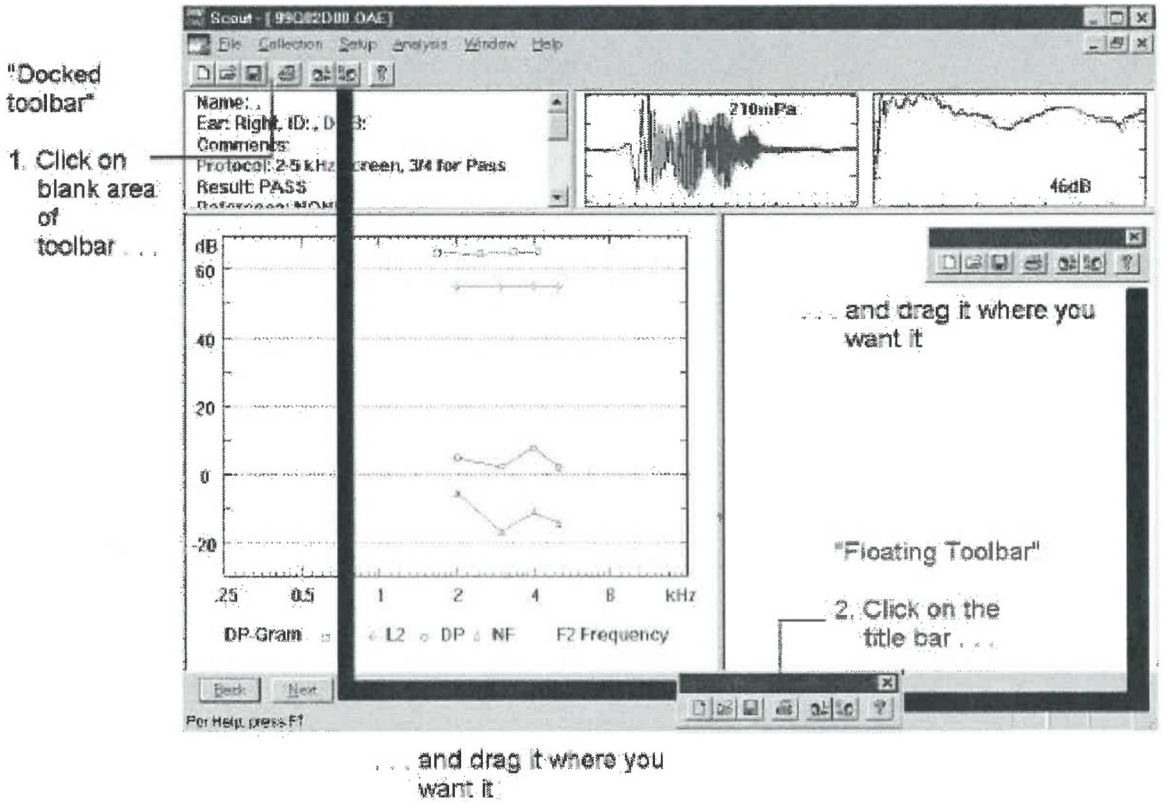
   —Activates a selection checkmark in front of the toolbar menu option, closes the drop-down menu, and displays the toolbar on the program screen.

   OR

   —Removes the selection checkmark from in front of the toolbar menu option, closes the drop-down menu, and removes the toolbar from the program screen.

Copyright © 2003-2004
Bio-Logic Systems Corp

Moving a "floating" toolbar to a new location


"Docked toolbar"
1. Click on blank area of toolbar . . .
. . . and drag it where you want it
"Floating Toolbar"
2. Click on the title bar . . .
. . . and drag it where you want it

To move a "floating" toolbar to a new location:

1. Position the mouse cursor on the title bar at the top of the toolbar.
2. Hold down the left mouse button.
3. Drag the toolbar where you want it.
4. Release the mouse button to leave the toolbar in the selected site.

   The program adds a title bar if the toolbar is in the raw data window.

   Note: To dock a floating toolbar quickly, double-click anywhere in the title bar area. The program automatically moves the toolbar to its previous docking site at the top or bottom of the screen.

Copyright © 2003-2004
Bio-Logic Systems Corp

Moving a "docked" toolbar to a new location

To move a "docked" toolbar to a new location:

1. Position the mouse cursor in an open area in the toolbar.
2. Hold down the left mouse button.
3. Drag the toolbar where you want it.
4. Release the mouse button to leave the toolbar in the selected site.

   The program repositions the toolbar in the selected site.

Displaying the names of buttons in a program toolbar

To display the names of buttons in a program toolbar:

1. Position the mouse cursor over each button in the toolbar.

   The program displays a pop-up label (Micro-Help) with the corresponding button name.

Executing a program command from a toolbar button

To execute a program command from a toolbar button:

1. Position the mouse cursor over the button.
2. Press the left mouse button.

   The program executes the program command or function.

   Note: The Help button appears "depressed" (pushed in) to show that the Help function is ON. Users must reselect the button to turn the function OFF and return the button to normal appearance.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

OPERATING THE SCOUT PROGRAM

How to start the Scout Sport's operating program

Users can enter the Scout DPOAE program by selecting the Scout DPOAE shortcut on the Windows Operating System desktop or by using the Windows Start button. Before you start the program, however, make sure that your computer's system clock is accurate.

Copyright © 2003-2004
Bio-Logic Systems Corp

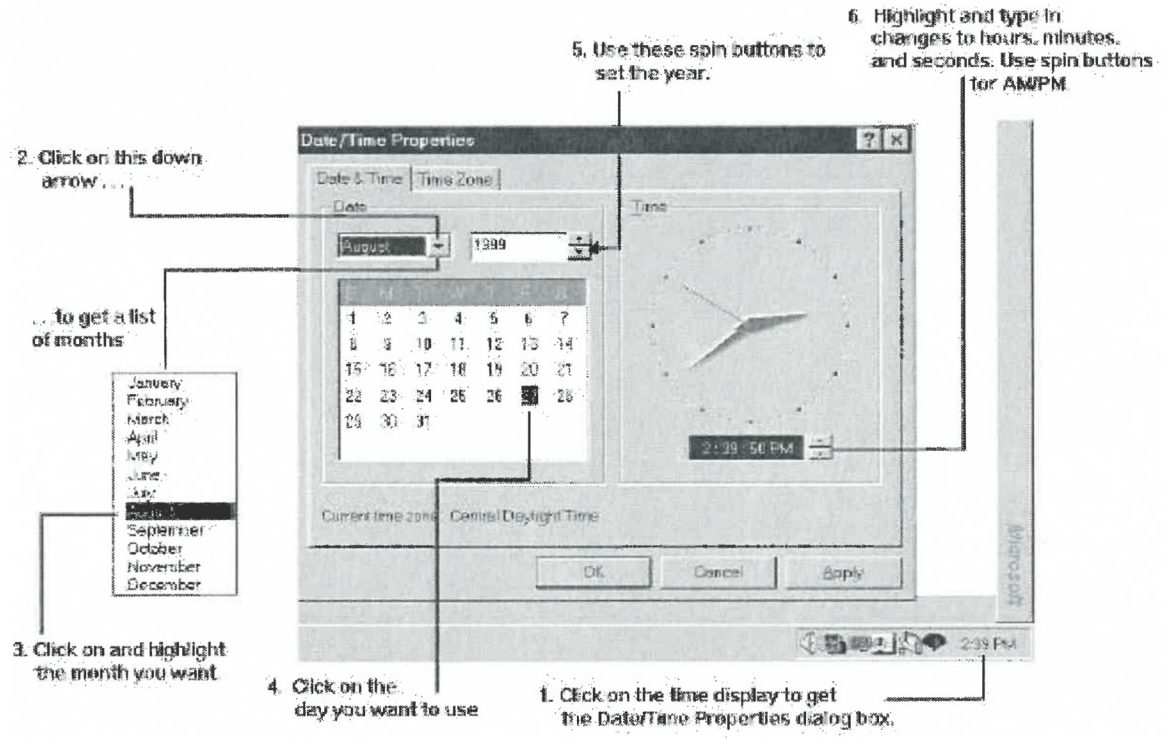
Checking the system clock

IMPORTANT

THE SCOUT PROGRAM USES THE SYSTEM TIME AND DATE FOR ASSIGNING AND TRACKING PATIENT FILENAMES. TO AVOID PROBLEMS, VERIFY THE SYSTEM TIME AND DATE ARE CORRECT BEFORE ENTERING THE SCOUT PROGRAM.

Before you enter the Scout program:

1. Turn the computer system ON and allow it to boot up to the Windows desktop.


5. Use these spin buttons to set the year.
6. Highlight and type in changes to hours, minutes, and seconds. Use spin buttons for AM/PM
Date/Time Properties
2. Click on this down arrow . . .
. . . to get a list of months
January
February
March
April
May
June
July
August
September
October
November
December
3. Click on and highlight the month you want
4. Click on the day you want to use
1. Click on the time display to get the Date/Time Properties dialog box.
OK
Cancel
Apply

2. Double-click the "time" display at the lower, right corner of the Windows display screen.

   This activates the Date/Time Properties dialog box.

3. Click on the Down arrow in the Date field.

   This displays a list of months on the screen.

4. Click on the month you want from the list.

   This closes the list of months and displays the month you chose in the Date field.

Copyright © 2003-2004
Bio-Logic Systems Corp

5. Click on one of the spin buttons next to the field that displays the year:

   —Click on the up arrow spin button for a later year

   OR

   —Click on the down arrow spin button for an earlier year.

6. Click on the day of the month you want in the calendar display box

7. Highlight the hours, minutes, or seconds in the Time field.

8. Type in the value you want.

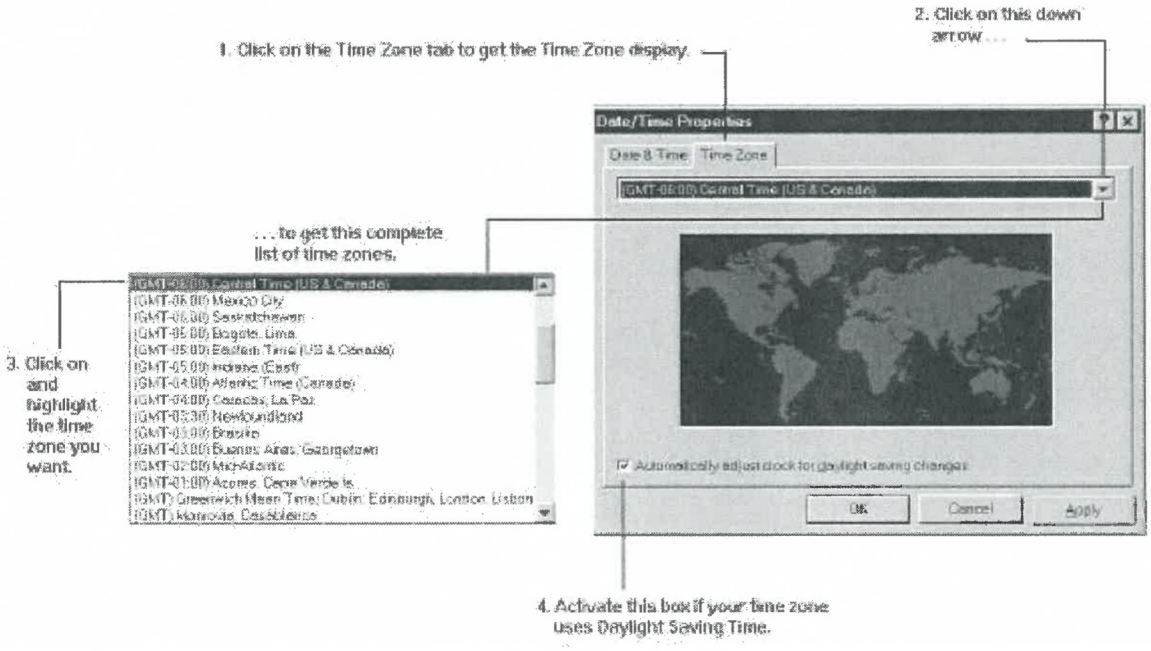
9. Click on one of the spin buttons next to the time field:

   —Click on the up arrow spin button for AM

   OR

   —Click on the down arrow spin button for PM.

Copyright © 2003-2004
Bio-Logic Systems Corp


2. Click on this down arrow . . .
1. Click on the Time Zone tab to get the Time Zone display.
Date/Time Properties
Date & Time
Time Zone
. . . to get this complete list of time zones.
3. Click on and highlight the time zone you want.
Automatically adjust clock for daylight saving changes
OK
Cancel
Apply
4. Activate this box if your time zone uses Daylight Saving Time.

10. Click on the Time Zone tab.

    This switches to the Time Zone display

11. Click on the down arrow on the right of the top data field.

    This displays a complete list of the world's time zones.

12. Click on and select the time zone you want.

    This closes the list of time zones and places the time zone you selected in the top data field.

    OR

13. Click on the area of the map that corresponds to the time zone you want.

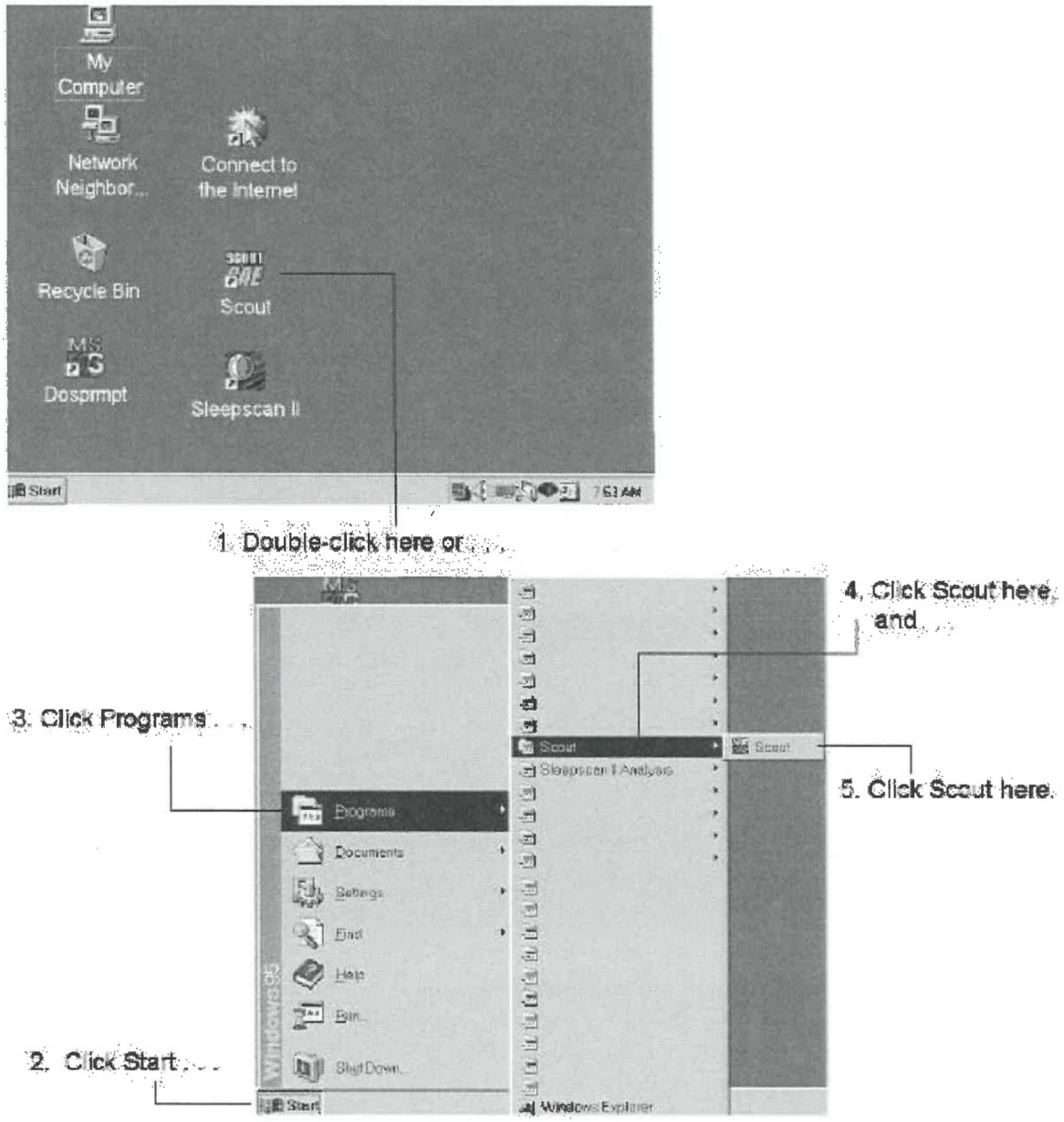
14. Click on the Daylight Savings Time checkbox to activate or deactivate the feature.

    Place a checkmark in this box if your time zone uses Daylight Savings Time.

15. Click on the OK command button to close the Date/Time Properties dialog box and save the changes.

Copyright © 2003-2004
Bio-Logic Systems Corp

Scout start-up

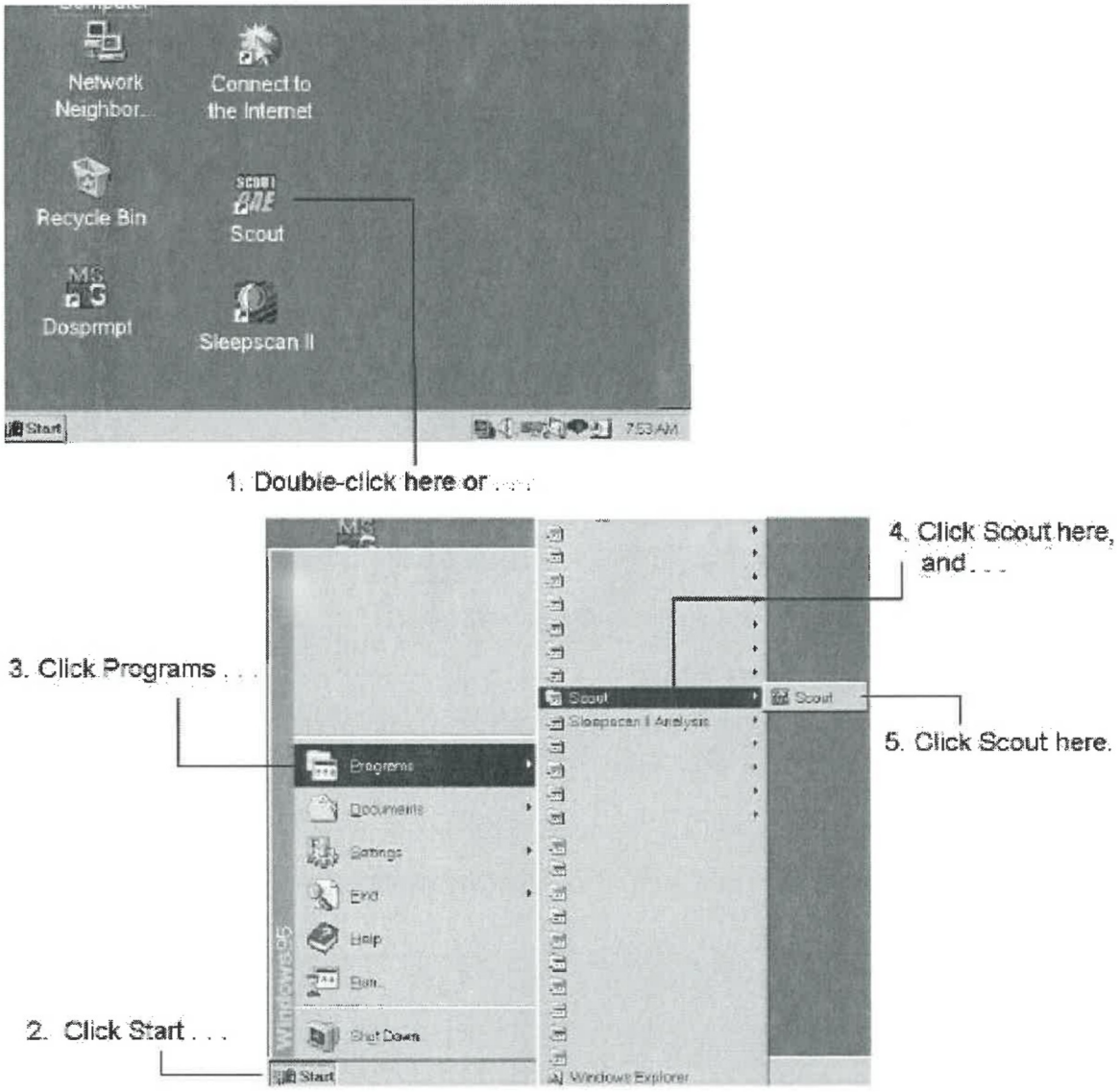


After you check or set your system's clock, you can start the Scout program and perform tests with confidence. Follow these steps:

1. Highlight and select (double click on) the Scout DPOAE shortcut icon on the Windows desktop

   OR

Copyright © 2003-2004
Bio-Logic Systems Corp



2. Select (click on) the Start button on the Windows desktop.

   A pop-up list of items appears.

3. Select (click on) the Programs item.

   A list of program available on the computer appears.

4. Select (click on) the Scout program item.

   The Scout program icon appears.

5. Select (click on) the Scout program icon.

6. This activates the Scout program screen.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Begin DPOAE Collection menu item

This menu item initiates a two-phase DPOAE test. During the first phase—pre-test calibration—the program measures the ear's response to a transient stimulus and then displays it on the screen as a temporal waveform and its spectrum to help users position the probe correctly. Ear canal responses to Channel A and Channel B stimuli also let the program calibrate the DPOAE test stimuli and adjust for ear canal resonance characteristics. During the second phase—DPOAE testing—the program measures and averages the patient's physiologic response to the stimuli and then displays the information on each completed frequency as text information and plotted graphs.

To use the Begin Collection menu item to perform a DPOAE Test:

1. Make sure:

   —You connect all equipment to the computer system correctly (turn to How to connect the Scout Sport to a computer system).

   —A clean ear tip is on the probe

   —You insert the ear tip securely in the patient's ear

2. Select (click on) Collection from the Main Menus.

3. Complete the Patient Information Window and click on the OK command button.

   This begins the DPOAE phase of testing and displays:

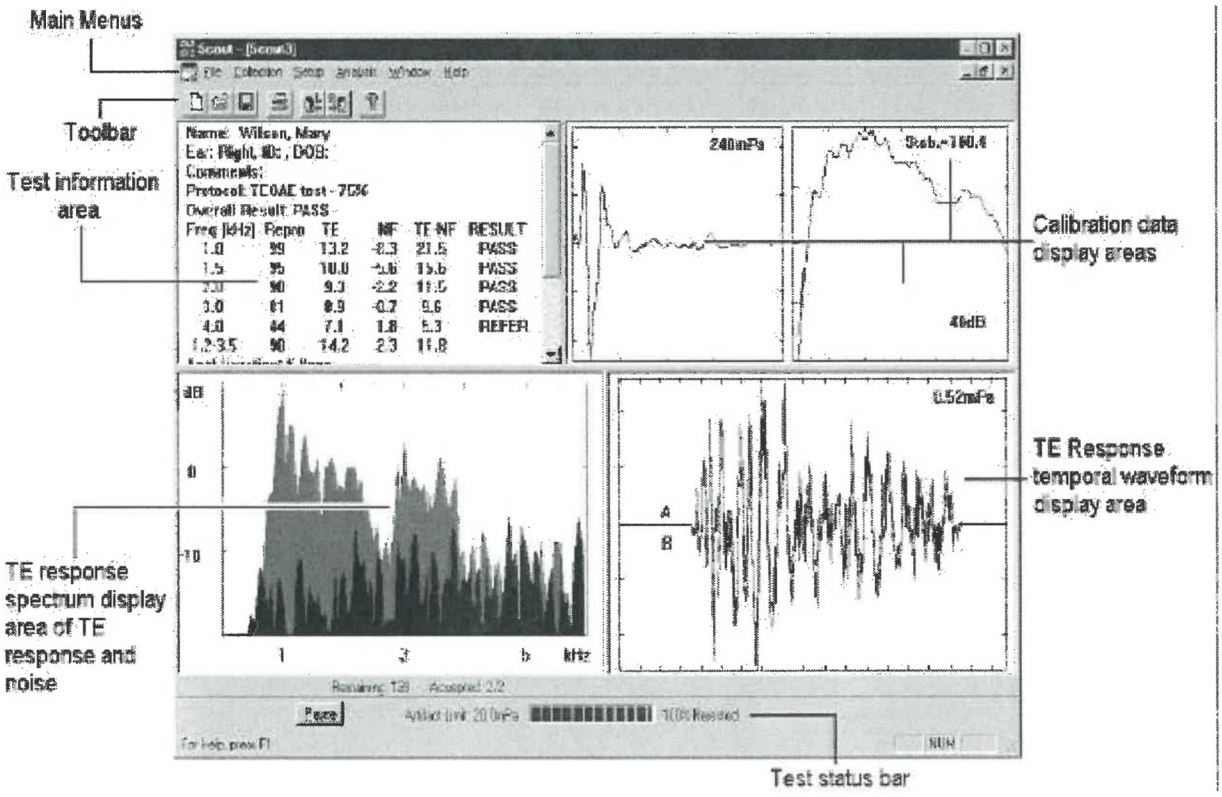
   —A graph of the superimposed Calibration Response Waveforms and their spectra in the upper, right corner of the screen.

   —The spectrum of the Response for the condition being measured on the right side of the screen.

   —Graphic plots of each pure tone stimulus level (L1 and L2) and the amplitudes of the distortion product emission and noise floor when each condition is completed.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to begin TEOAE collection


Main Menus
Toolbar
Test information area
Calibration data display areas
TE Response temporal waveform display area
TE response spectrum display area of TE response and noise
Test status bar

When you start a TEOAE data collection, the program performs an in-the-ear calibration first. This process insures that the stimulus intensity that goes to the ear meets the target amplitude value in the test protocol. This process is identical to calibration during a DPOAE test. Refer to the *Scout Sport System User's and Service Manual* (Part number 590-OAUM03) for additional information about the in-the-ear calibration phase of the test.

After the calibration phase, the TEOAE measurement phase begins. The TE-gram screen is similar to the DP-gram screen. The illustration shows a typical TE-gram display. Components for the display include:

Copyright © 2003-2004
Bio-Logic Systems Corp

The TE Gram Display

Component	Description
Main Menu and Toolbar	The main menu and toolbar items on the TE data collection screen are identical to those seen on the DP data collection screen.
Test Information Text Area	The test information text area displays the patient information that you entered when you initiated the test.
Calibration Display Area	The calibration display area shows the data achieved during the calibration phase of the TE test. Both the temporal waveform and the spectrum of the calibration appear.
TE Response Spectrum Display Area	The TE response spectrum shows a frequency vs. amplitude graph of the TE response.
TE Response Temporal Waveform Display Area	The TE response temporal waveform displays two superimposed waveforms that represent two alternately collected response buffers.
Test Status Bar	The test status bar shows the artifact rejection threshold value.

Note: Complete descriptions for these components appear in the DESCRIPTIONS section of this document. See The Scout start screen: TEOAE tests.

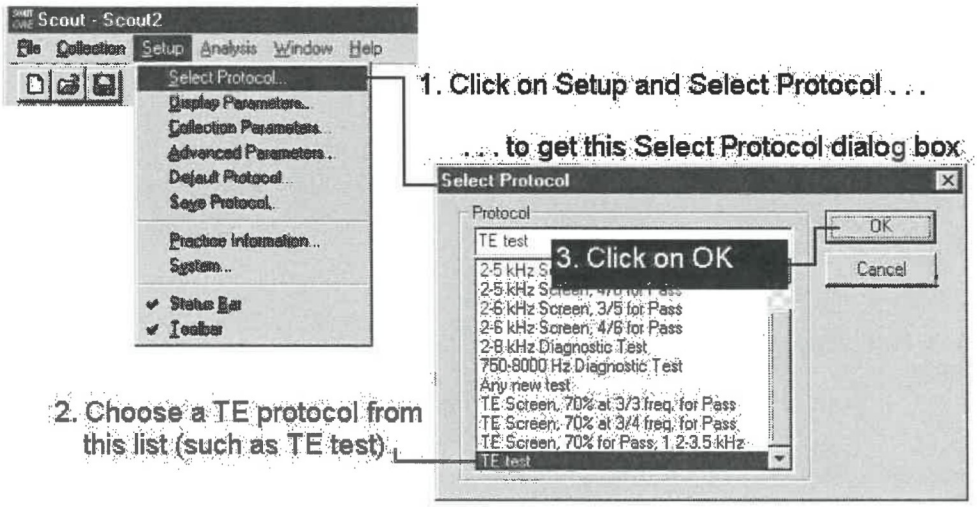
Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Select Protocol menu item



This menu item lets you replace the current protocol with any protocol in the Select Protocol display. The program uses the new protocol parameters until you select a different protocol or exit the program. To select a new protocol:

1. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Select Protocol from the drop-down list.

   The Select Protocol menu appears on the screen.

3. Select (click on) the protocol you want from the list.

   The program highlights the selection and displays the protocol name in the Protocol field.

   OR

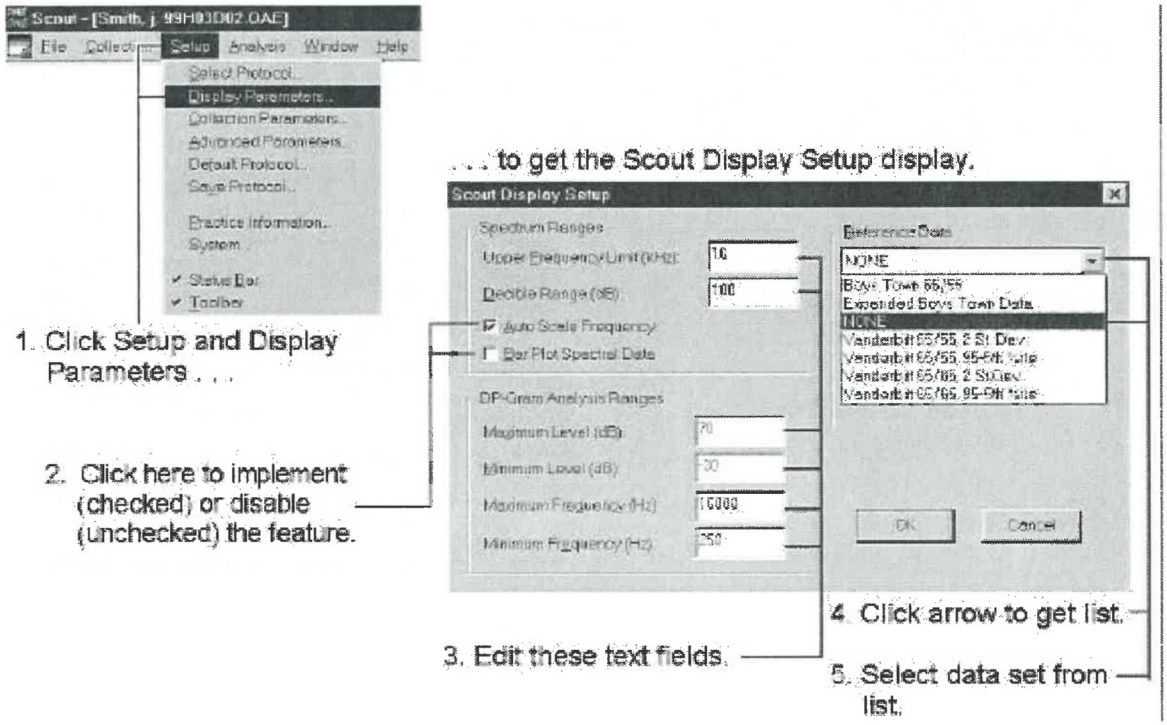
4. Use the up/down arrow keys to move the highlight to the protocol you want.

5. Select (click on) the OK button to load the protocol.

Note: The Scout program displays both DPOAE and TEOAE protocols. DPOAE hardware must have the correct security enabled to perform the specified test. If the hardware is not available, an error message appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the DPOAE Display Parameters menu item



This menu item activates a Display Setup menu for changing the Spectrum and DP Gram Analysis ranges of the current display. To change the parameter values:

1. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Display Parameters from the drop-down list.

   The Scout Display Setup display appears on the screen.

3. Click the Auto Scale Frequency option checkbox to show or hide a checkmark.

   —Check the box to use the autoscale option.

   —Leave the box unchecked to keep the horizontal axis on the response spectrum fixed.

4. Click the Bar Plot Spectral Data option checkbox to show or hide a checkmark.

   —Check the box to show the Spectral Data as a bar plot on the display screen.

   —Leave the box unchecked to show the Spectral Data in the default mode.

Copyright © 2003-2004
Bio-Logic Systems Corp

5. Click on the arrow in the reference data field.

   A drop-down list of reference sets appears.

6. Select (click on) the reference set you want to use.

   This closes the list and displays the reference set you chose in the Reference Data field.

7. Click on any parameter field.

   A text cursor appears in the field.

8. Use the computer's keyboard (including the Backspace and Delete keys) to enter a new value for the parameter you've chosen.

9. Repeat the previous steps for every parameter you want to change.

10. Select (click on) the OK button.

    This closes the Scout Display Setup display and saves any changes you have made.

11. Make sure data is already displayed on the Scout test screen.

12. Select (click on) Analysis from the Main Menus.

    This applies any changes you have made to the data on the screen.

13. Select (click on) Activate Display Setup.

    This displays the parameters you have set in the active data window.

14. Select (click on) Setup.

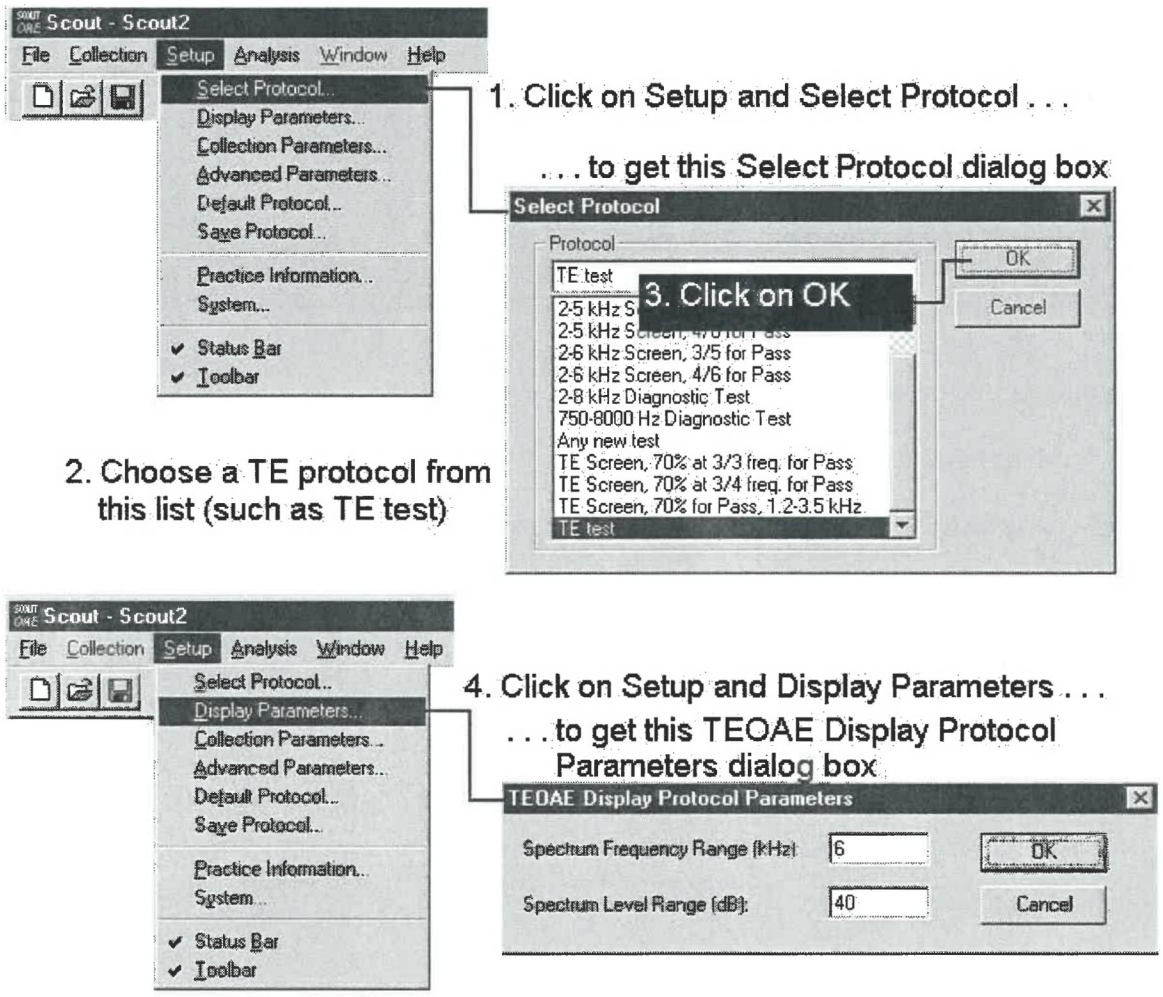
    This displays a drop-down list of menu items.

15. Select (click on) Save Protocol.

    This saves your changes permanently to the protocol you selected.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the TEOAE Display Protocol Parameters dialog box



The illustration shows the TEOAE Display Protocol Parameters dialog box. For descriptions of this dialog box and its components, turn to the Description section of this document under TEOAE Display Parameters Setup.

To activate the TEOAE Display Parameters dialog box:

Follow these steps:

1. Select Setup from the Main Menus.

   A drop-down list of items appears.

2. Select Select Protocol from the drop-down list.

   A Select Protocol dialog box appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

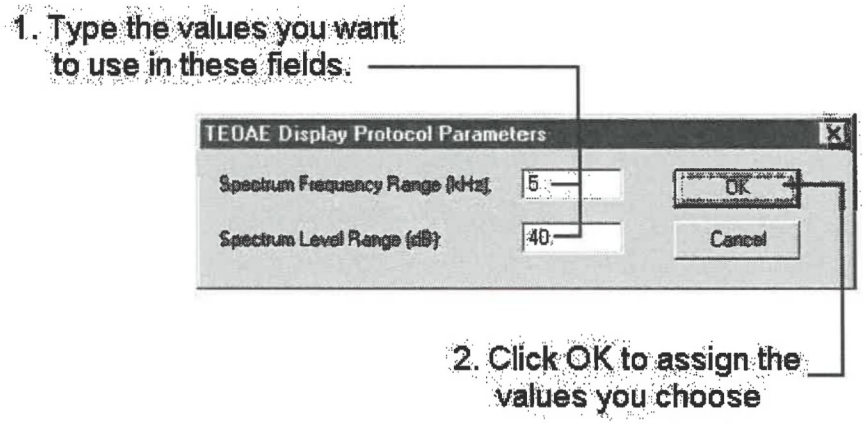
3. Select a TE protocol from the Select Protocol list.
4. Select the OK command button.

   This closes the Select Protocol dialog box.
5. Select Setup from the Main Menus.

   A drop-down list of items appears.
6. Select Display Parameters from the drop down list.

   The TEOAE Display Parameters Setup dialog box appears.

To use the TEOAE Display Parameters dialog box:


1. Type the values you want to use in these fields.
TEOAE Display Protocol Parameters
Spectrum Frequency Range (kHz)
5
Spectrum Level Range (dB)
40
OK
Cancel
2. Click OK to assign the values you choose

Follow these steps:

1. Launch the TEOAE Display Parameters Setup dialog box.

   See How to use the TEOAE Display Protocol Parameters dialog box.
2. Click on either Spectrum parameter field.

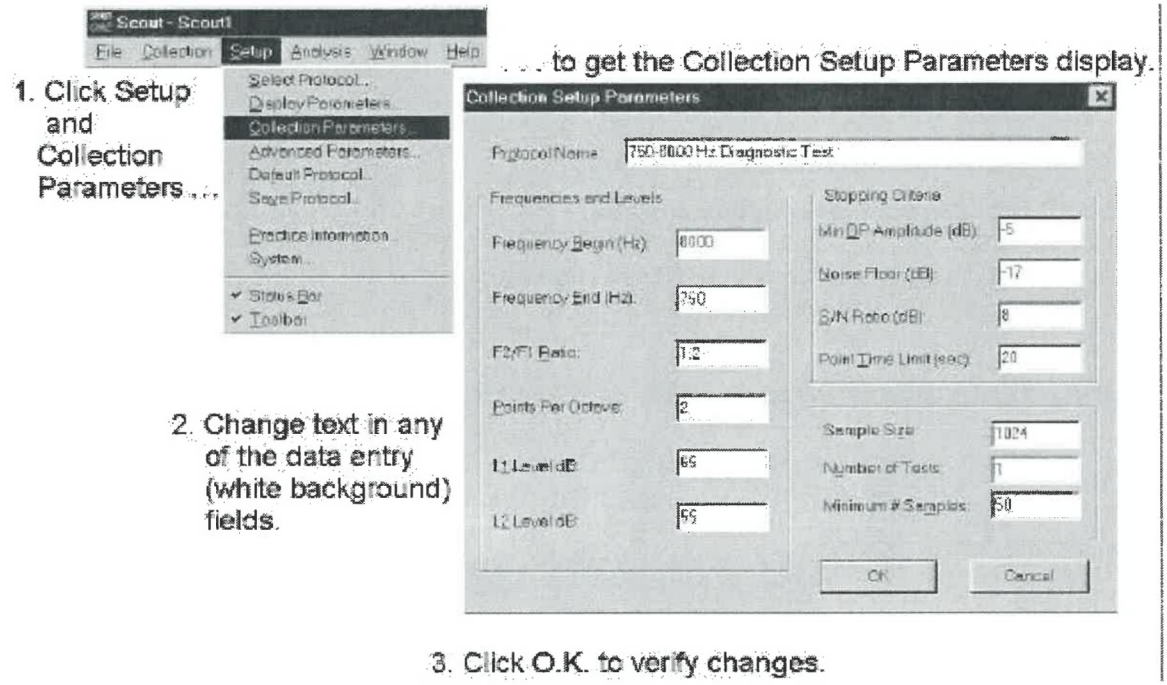
   A text cursor appears in the field.
3. Use the computer's keyboard (including the Backspace and Delete keys) to enter a new value for the parameter you've chosen.

   The Spectrum Frequency Range value defines the upper limit of the spectrum display of the TE response. Minimum and maximum allowable values are 1 and 10 kHz, respectively. The Spectrum Level Range value defines the upper limit of the spectrum display of the TE response (20-90 dB SPL).
4. Select (click on) the OK command button to close the dialog box and assign the values you chose.

   OR
5. Select (click on) the Cancel command button to close the dialog box without changing any values.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the DPOAE Collection Parameters menu item



This menu item activates a Collection Parameters Setup display. Use this display to change the values for the test parameters you use during a patient collection.

To activate the Collection Setup Parameters display

1. Select (click on) Setup from the Main Menus.

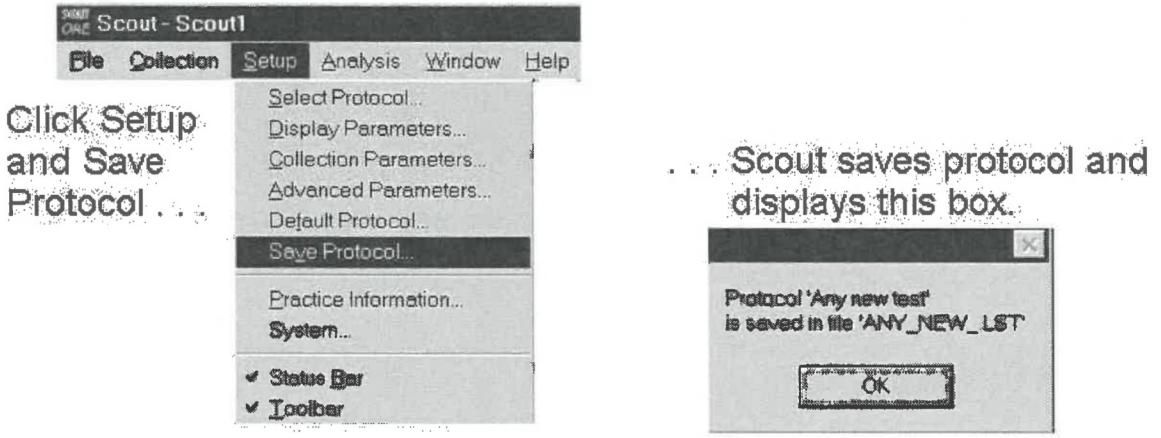
   A drop-down list of items appears.

2. Select (click on) Collection Parameters from the drop-down list

   The Collection Setup Parameters display appears on the screen. This display holds the current parameters that Scout uses to collect test data.

Copyright © 2003-2004
Bio-Logic Systems Corp

To change test parameters



1. Click the mouse in any parameter's data entry field.

   A text cursor appears.

2. Use the computer's keyboard (including the delete and backspace keys) to enter a new value for the parameter you have chosen.

Note: Be sure to assign a new name to the protocol to retain the original protocol in the list. Keeping the name the same changes the parameters of the original protocol permanently.

3. Repeat these steps for all of the parameters you want to change.

4. Select (click on) the OK command button.

   Scout closes the display and shows the new parameters on the screen.

5. Select (click on) Setup from the Main Menus

6. Select (click on) Save Protocol from the drop-down list.

   This saves your changes permanently to the protocol you selected.

Copyright © 2003-2004
Bio-Logic Systems Corp

Determining Beginning and Ending F2 Frequency Values

The Frequency Begin (Hz) and Frequency End (Hz) parameters of the Collection Parameter display determine whether the program begins testing from a high to low frequency or a low to high frequency. Beginning and ending frequency values must be within the following ranges.

- Frequency Begin (Hz): Enter a value between 10,000 Hz (Highest) and 500 Hz (Lowest). To test from high to low frequencies, this value must be higher than the Frequency End (Hz) value.

- Frequency End (Hz): Enter a value between 500 Hz (Lowest) and 10,000 Hz (Highest). To test from low to high frequencies, this value must be higher than the Frequency Begin (Hz) value.

Determining L1 and L2 Values

The "L1 Level" field sets the intensity (dB SPL) for the F1 tone in the DP frequency pair. The "L2 Level" field sets the intensity (dB SPL) for the F2 tone in the DP frequency pair.

Although earlier DPOAE literature used equal intensity values (such as 70/70) more recent DPOAE literature report larger DP amplitudes by entering an F1 intensity value approximately 10 to 15 dB higher than the F2 intensity. The more recent articles also indicate a moderate difference in intensities (such as 65/55) helps separate normal from hearing impaired ears.

Determining the Maximum Number of Data Points per Octave

The maximum number of points per octave is 20 (for 1000 to 10000 Hz). In the 500-1000 Hz range, the maximum number of points per octave is 10 for a sample size of 1024.

Determining the Point Time Limit

Users can enter a range of 4 to 64 seconds. Entering a longer Point Time Limit setting helps to average out noise and optimizes the conditions used for measuring small amplitude emissions. Although averaging takes longer, this method is particularly useful if the ambient/myogenic noise level is high.

Copyright © 2003-2004
Bio-Logic Systems Corp

Determining the Averaging Time in a Test

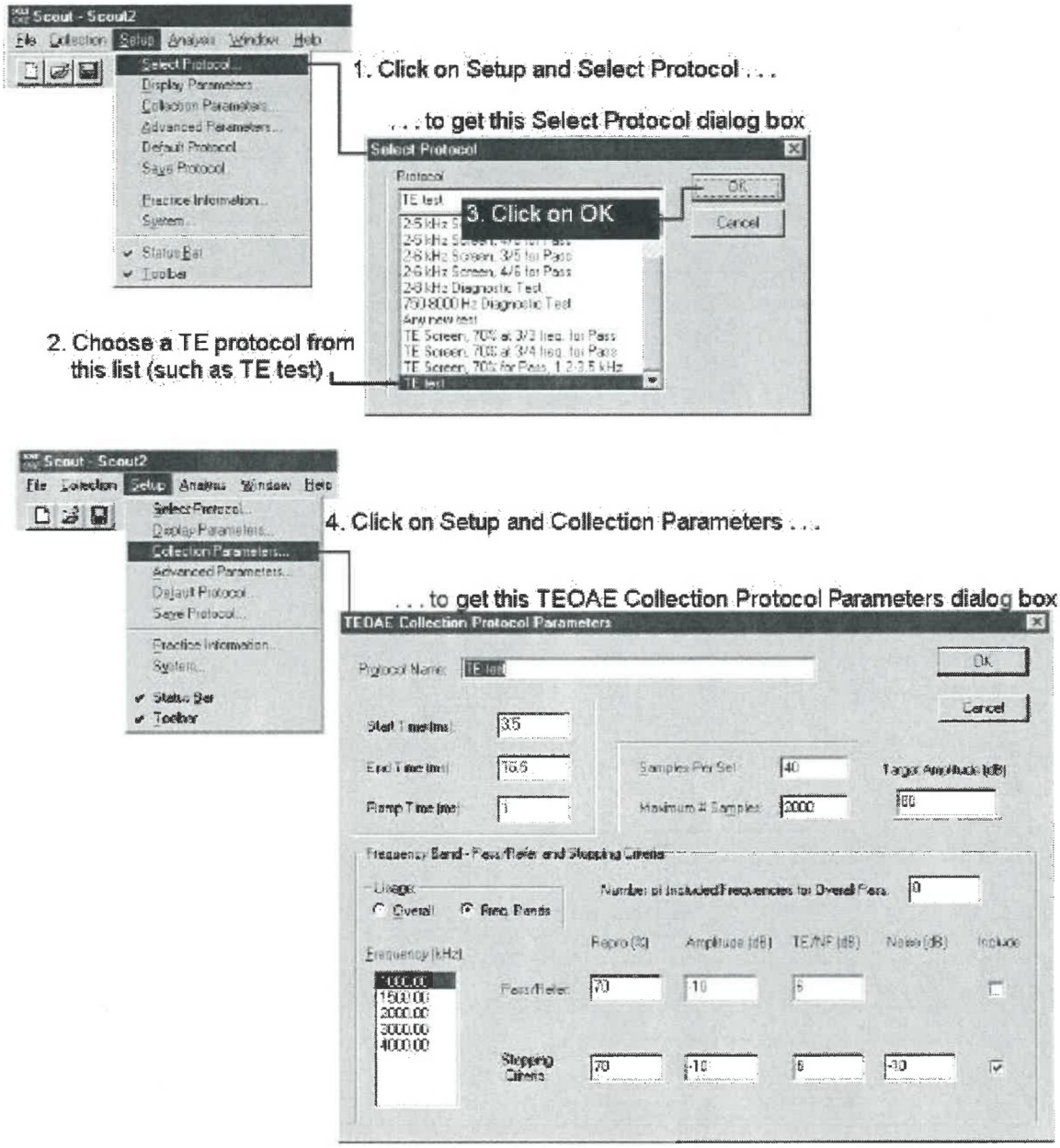
In the Collection Parameters display (turn there for more information), the values for the Sample Size and the Minimum # Samples work together to determine the minimum amount of averaging time during a test.

Note: These minimum times are for each individual frequency condition, not the whole test. The minimum total time is the minimum time multiplied by the number of conditions. Averaging time automatically doubles when the Sample Size value or the Minimum # Samples value doubles. For example:

IF	AND	THEN
The Sample Size value is 1024	The Minimum # Samples value is 25 sweeps per set	The minimum amount of averaging time is 25 times 20ms or half a second.
The Sample Size value remains at 1024	The Minimum # Samples changes to 50 sweeps per set	The minimum amount of averaging time is 50 times 20ms or 1 second.
The Sample Size changes to 2048	The Minimum # Samples value remains at 25 sweeps per set	The minimum amount of averaging time is 25 times 40ms or 1 second.
The Sample Size changes to 2048	The Minimum # Samples changes to 50 sweeps per set	The minimum amount of averaging time is 50 times 40ms or 2 seconds.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the TEOAE Collection Parameters dialog box



The illustration shows the TEOAE Collection Protocol Parameters dialog box. For descriptions of this dialog box and its components, turn to the Description section of this document under TEOAE Collection Parameters Setup.

Copyright © 2003-2004
Bio-Logic Systems Corp

To gain access to the TEOAE Collection Protocol Parameters dialog box:

Follow these steps:

1. Select Setup from the Main Menus.

   A drop-down list of items appears.

2. Select Select Protocol from the drop-down list.

   A Select Protocol dialog box appears.

3. Select a TE protocol from the Select Protocol list.
4. Select the OK command button.

   This closes the Select Protocol dialog box.

5. Select Setup from the Main Menus.

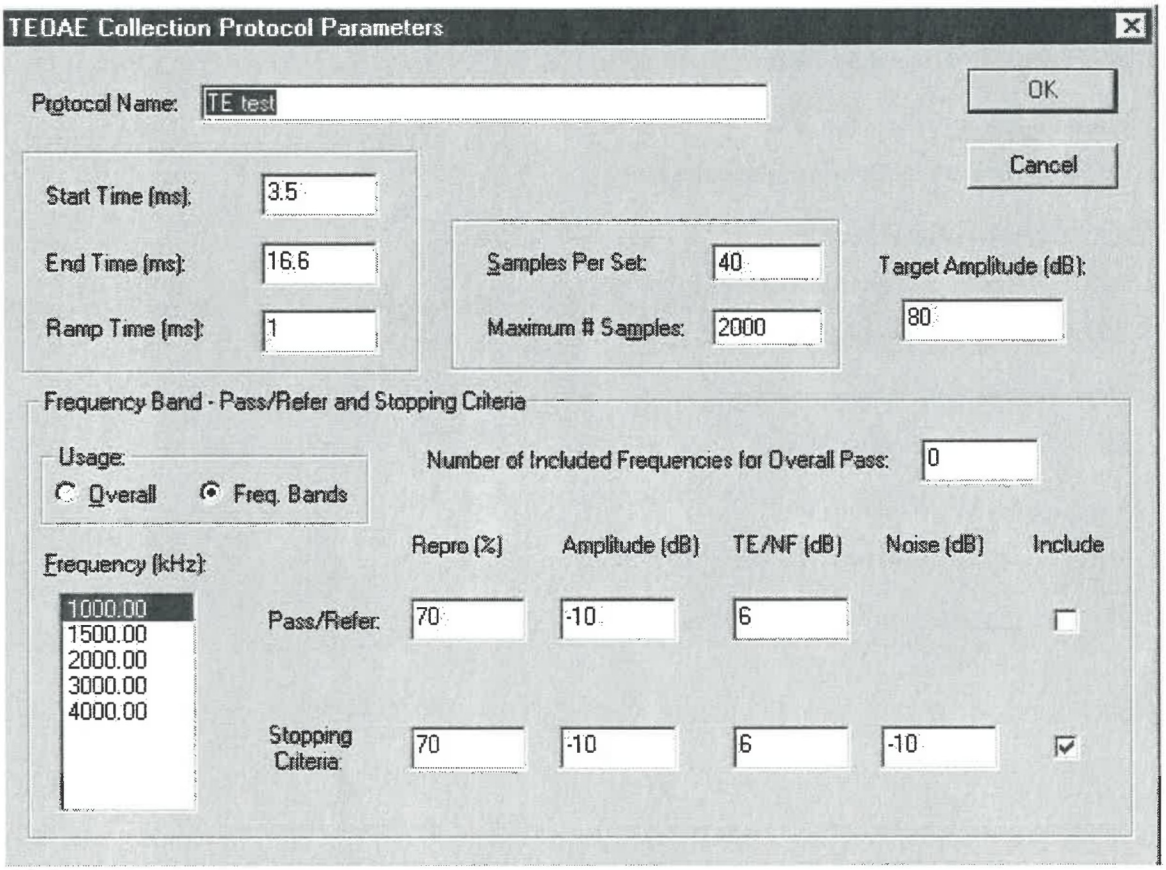
   A drop-down list of items appears.

6. Select Collection Parameters from the drop down list.

   The TEOAE Collection Protocol Parameters dialog box appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

To use the TEOAE Collection Protocol Parameters dialog box:



Follow these steps:

1. Launch the TEOAE Collection Protocol Parameters dialog box.

   See How to use the TEOAE Collection Protocol Parameters dialog box.

2. Click on any of the data entry fields in the dialog box.

   A text cursor appears in the field.

3. Use the computer's keyboard (including the Backspace and Delete keys) to enter a new value for the field you've chosen.

Copyright © 2003-2004
Bio-Logic Systems Corp

Note: These fields include:

Protocol Name	Start Time	End Time	Ramp Time
Samples per Set	Maximum # Samples	Target Amplitude (dB)	Number of Included Frequencies for Overall Pass
Three/Pass Refer fields	Repro %	Amplitude %	TE/NF (dB)
Four Stopping Criteria fields	Repro %	Amplitude %	TE/NF (dB) Noise (dB)

For information about their contents and purpose, turn to the Description section of this document under TEOAE Collection Parameters Setup.

4. Select (click on) one of the Usage radio buttons until a bullet appears to activate it.

   Activate Overall and the program applies the stopping rules and pass criteria to an Overall frequency band. Only one frequency band, 1.2-3.5 kHz displays in the Frequency (kHz) list. Activate Frequency Band and the program applies the stopping rules and pass criteria to any combination of frequency bands that you define. See step 5.

5. Select (click on) one of the frequencies in the Frequency (kHz) list.

   You can set the stopping rules and pass criteria can be set for each of the frequency bands by highlighting each frequency in the list, one at a time, and then placing values in the Pass/Refer Criteria and Stopping Criteria fields (see steps

6. Select (click on) the Include checkboxes until a check mark appears to include frequency criteria in the Pass/Refer recommendation.

   OR

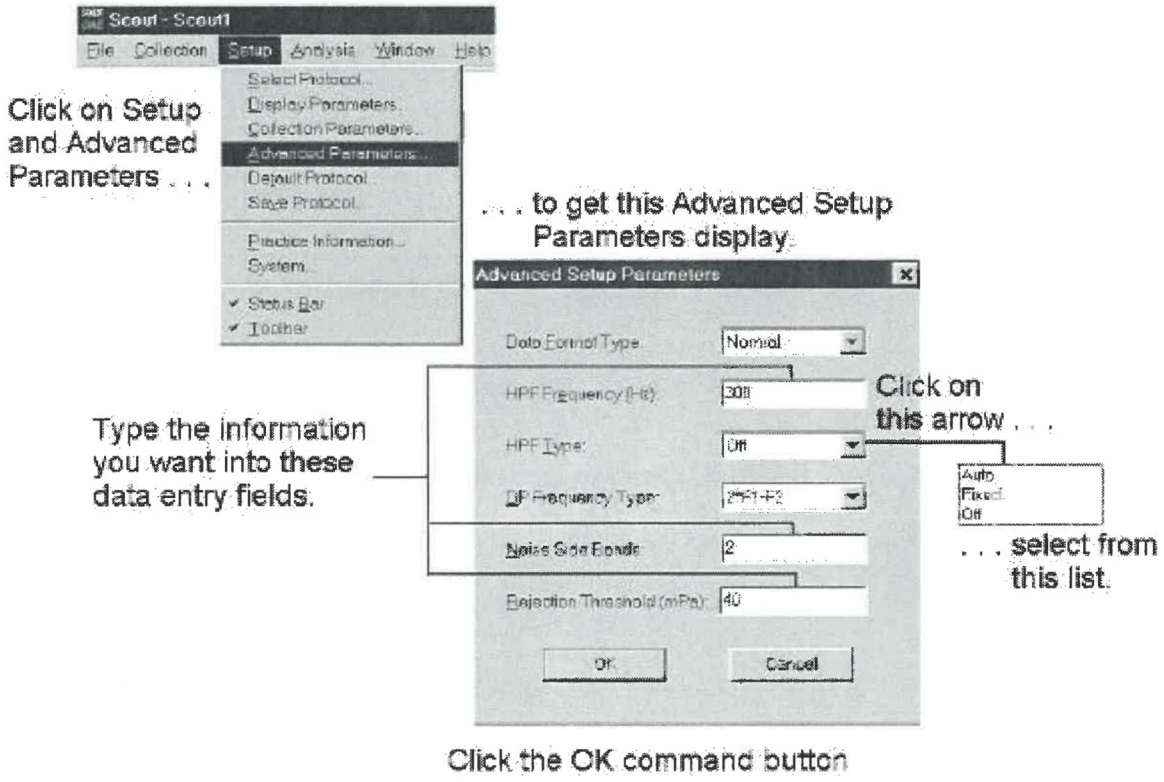
7. Click on this checkbox until no checkmark appears to exclude the frequency's criteria.
8. Select (click on) the OK command button to close the dialog box and assign the values you chose.

   OR

9. Select (click on) the Cancel command button to close the dialog box without changing any values.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Advanced DPOAE Parameters item



This menu item activates an Advanced Parameters Setup display. Use this display to change parameter values that the Scout program uses during a patient collection.

To activate the Advanced Parameters display

1. Select (click on) Setup from the Main Menus.

   A drop-down list of items appears.

2. Select (click on) Advanced Parameters from the drop-down list

   The Advanced Parameters display appears on the screen. This display holds the current parameters that Scout uses to collect test data.

3. Click the mouse in any data entry field.

   The data entry fields in this display are HP Frequency (Hz), Noise Side Bands, and Rejection Threshold (mPa). When you click the mouse on them, a text cursor appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

4. Use the computer's keyboard (including the delete and backspace keys) to enter a new value for the parameter you have chosen.

   AND

5. Click the mouse on the down arrow in the HPF type field.

   A drop-down list of selections appears.

6. Select the HPF type you want.

NOTE: The other selection fields in this display—the Data Format Type field and the DP Frequency Type field—currently offer only one selection. Noise side bands accept 1-3. You can edit the Rejection Threshold.

7. Click the OK command button.

8. Select (click on) Setup.

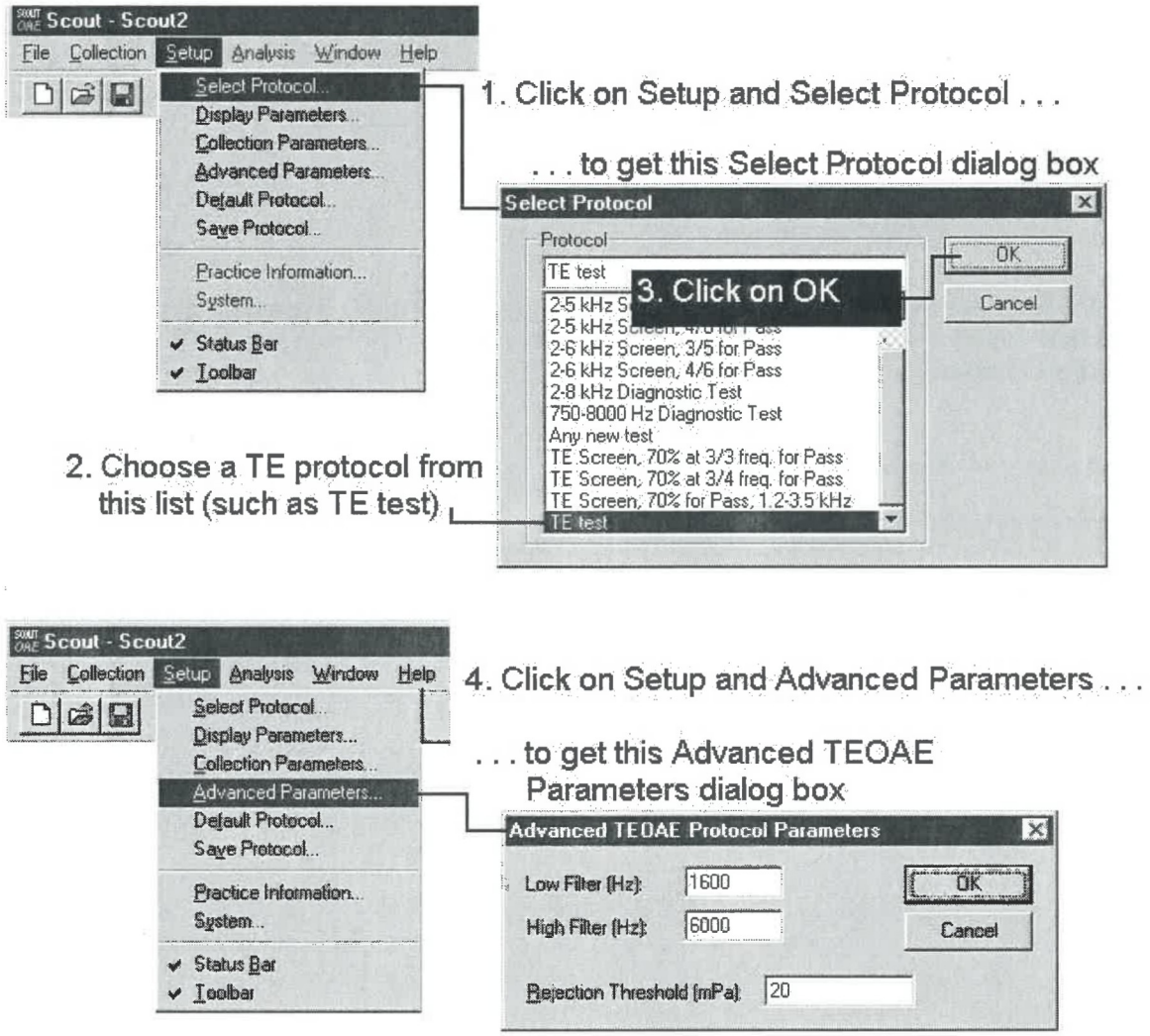
   This displays a drop-down list of menu items.

9. Select (click on) Save Protocol.

   This saves your changes permanently to the protocol you selected.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Advanced TEOAE Parameters dialog box



The illustration shows the Advanced TEOAE Protocol Parameters dialog box. For descriptions of this dialog box and its components, turn to the Description section of this document under TEOAE Advanced Parameters Setup.

To gain access to the Advanced TEOAE Parameters dialog box:

Follow these steps:

1. Select Setup from the Main Menus.

   A drop-down list of items appears.

2. Select Select Protocol from the drop-down list.

   A Select Protocol dialog box appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

3. Select a TE protocol from the Select Protocol list.
4. Select the OK command button.

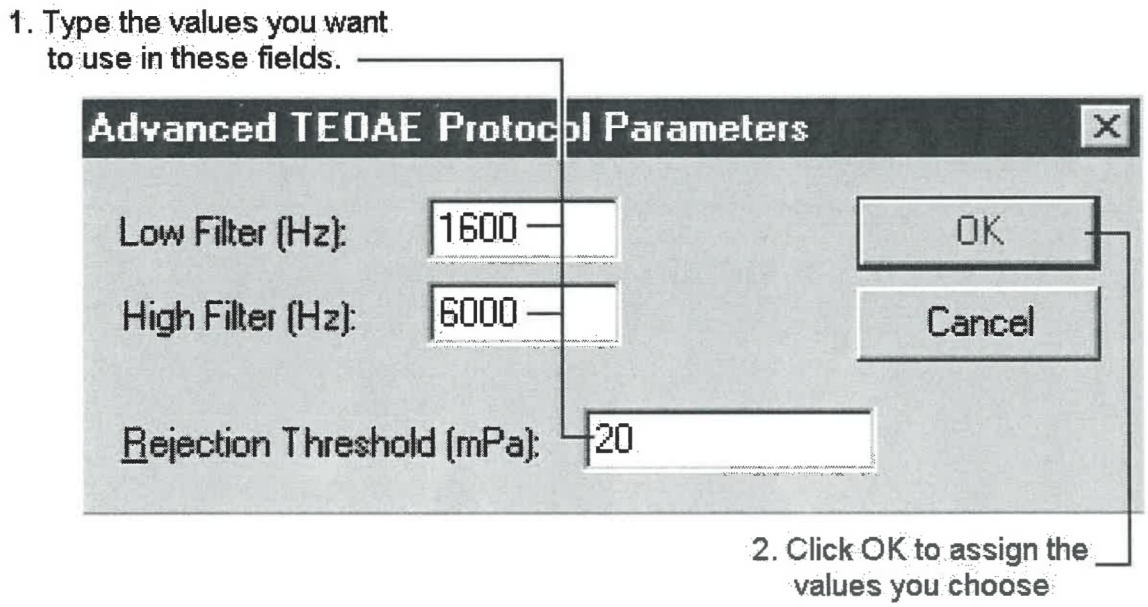
   This closes the Select Protocol dialog box.
5. Select Setup from the Main Menus.

   A drop-down list of items appears.
6. Select Advanced Parameters from the drop-down list.

   The Advanced TEOAE Protocol Parameters dialog box appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

To use the Advanced TEOAE Protocol Parameters dialog box:



Follow these steps:

1. Launch the Advanced TEOAE Protocol Parameters dialog box.

   See How to use the Advanced TEOAE Protocol Parameters dialog box.

2. Click on any of the data entry fields.

   A text cursor appears in the field.

3. Use the computer's keyboard (including the Backspace and Delete keys) to enter a new value for the parameter you've chosen.

   The Low Filter field lets you enter a value that defines the low filter (that is, high pass) filter that applies to the TE response (Min: 700 Hz; Max: 5000 Hz). The High Filter field lets you enter a value that defines the high filter (that is, low pass) filter applied to the TE response (Min: 1000 Hz; Max: 10000 Hz). The Rejection Threshold field lets you enter the default artifact rejection threshold value that the program uses to eliminate incoming data from the TE response (Min: 0; Max: 200).

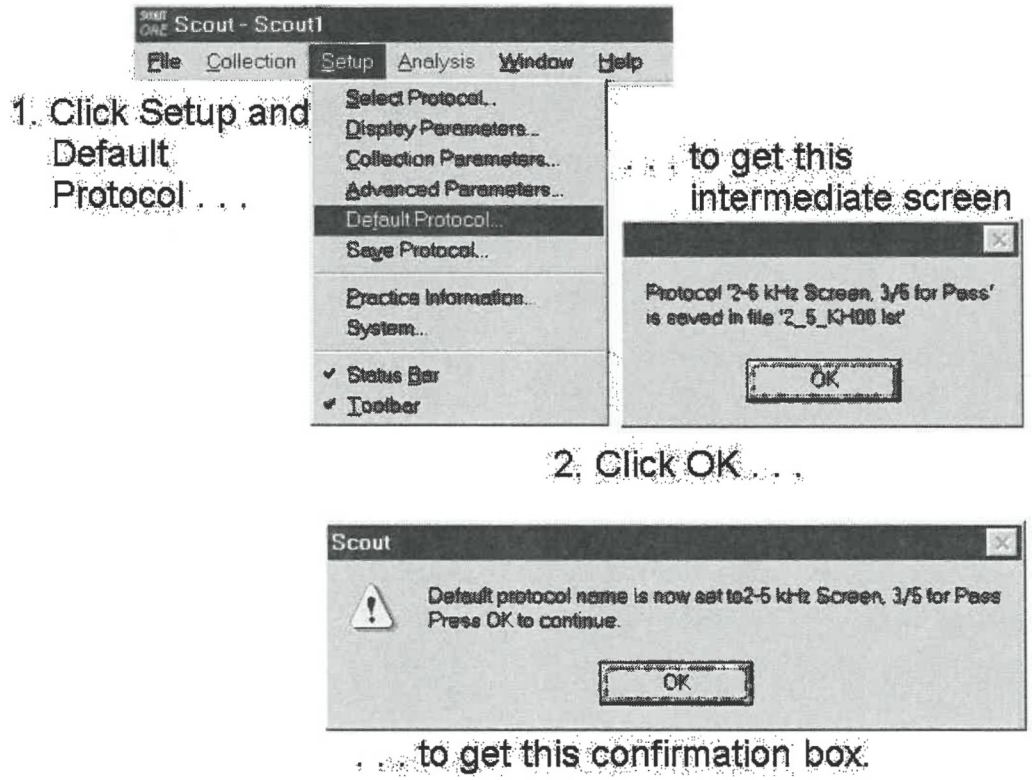
4. Select (click on) the OK command button to close the dialog box and assign the values you chose.

   OR

5. Select (click on) the Cancel command button to close the dialog box without changing any values.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Default Protocol Menu Option


Scout - Scout1
File Collection Setup Analysis Window Help
Select Protocol...
Display Parameters...
Collection Parameters...
Advanced Parameters...
Default Protocol...
Save Protocol...
Practice Information...
System...
Status Bar
Toolbar
1. Click Setup and Default Protocol . . .
. . . to get this intermediate screen
Protocol '2-5 kHz Screen, 3/5 for Pass' is saved in file '2_5_KH00.lst'
OK
2. Click OK . . .
Scout
Default protocol name is now set to2-5 kHz Screen, 3/5 for Pass
Press OK to continue.
OK
. . . to get this confirmation box.

When you start the Scout program, it loads a default protocol that comes with it. This menu item lets you save a favorite protocol (that you selected with the Select Protocol item) as the program default. The Scout program then uses this protocol as the default. To save a new "default" protocol:

1. Select the protocol you want.

   Turn to "How to use the Select Protocol menu item."

2. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

3. Select (click on) Default Protocol from the drop-down list.

   A message: "Protocol is saved in the xxxxx.LST." appears on the screen.

4. Select (click on) the OK command button.

   This closes the message and displays a second message that confirms the setting for the default protocol.

5. Select (click on) the OK command button to continue.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Save Protocol Menu Option

This menu item lets users save either edited or new protocols to the Select Protocol menu list

To create and save a new protocol by editing and overwriting an existing protocol:

1. Select the protocol you want to use as a "template."

   Turn to "How to use the Select Protocol menu item."

2. Change the protocol per your requirements.

   For details, turn to these sections:

   How to use the Display Parameters menu item

   How to use the Collection Parameters menu item

   and

   How to use the Advanced Parameters item

3. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

4. Select (click on) Save Protocol from the drop-down list.

   A confirmation message appears that shows where the Scout program saved the protocol.

5. Select (click on) the OK command button.

   This saves the new protocol by overwriting to the original protocol name.

Copyright © 2003-2004
Bio-Logic Systems Corp

To create a new protocol without overwriting the original protocol:

1. Select the protocol you want to use as a "template."

   Turn to "How to use the Select Protocol menu item."

2. Change the protocol per your requirements.

   Turn to:

   How to use the Display Parameters menu item

   and

   How to use the Advanced Parameters item

3. Activate the Collection Parameters display.

4. Type a different name for your new protocol in the Protocol name field.

   Click How to use the Collection Parameters menu item or turn to that section for more information.

5. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

6. Select (click on) Save Protocol from the drop-down list.

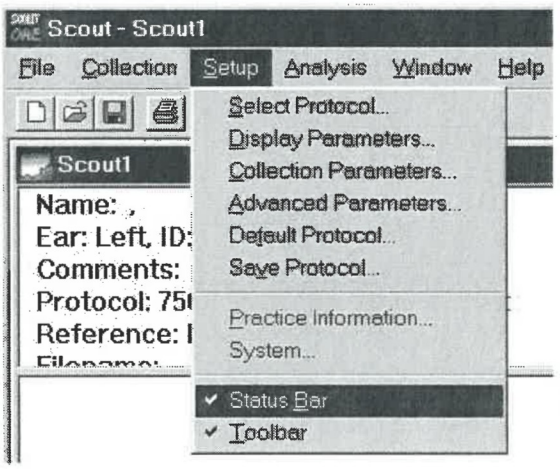
   A confirmation message appears that shows where the Scout program saved the protocol.

7. Select (click on) the OK command button.

   This saves the new protocol without overwriting the original protocol.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Status Bar Menu Option



Click on Setup . . .

. . . then click on Status Bar to show (checked) or hide (unchecked) the Status Bar.

This menu item displays or hides the status bar. This feature is near the bottom of the data display area.

To display or hide the status bar:

1. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) the Status Bar item to show (add a checkmark) or hide (remove a checkmark) the Status Bar feature.

   The program automatically closes the menu and displays or hides the Status Bar at the bottom of the data display area.

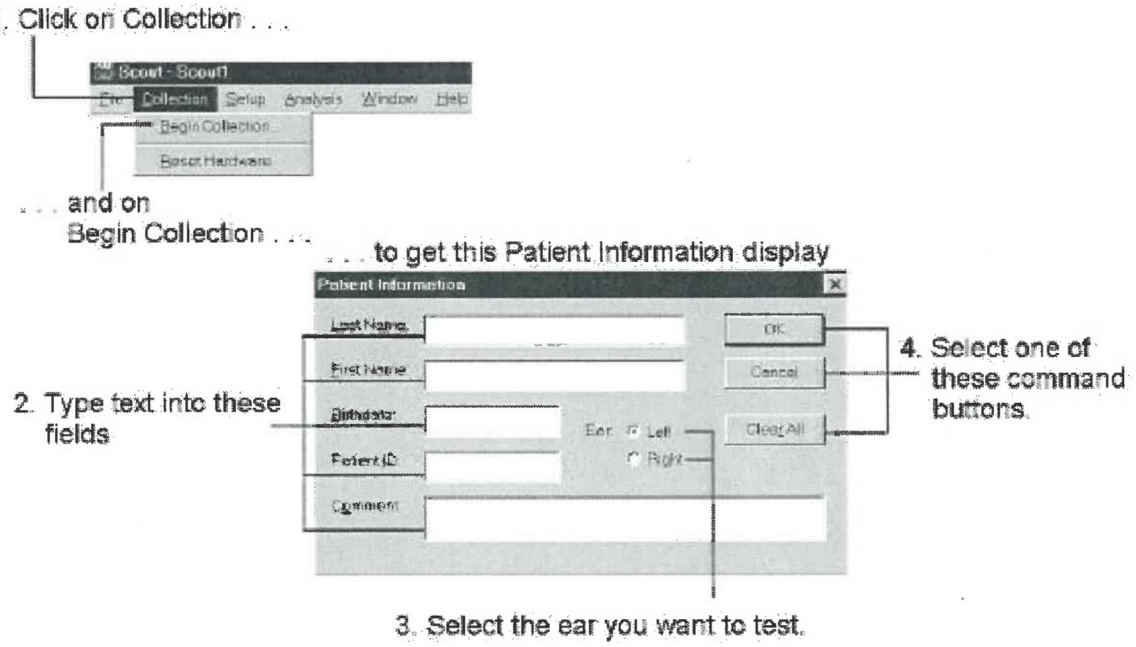
Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to load New Patient information



This topic explains how to activate an empty data window that you can use to load new patient information. The Scout program automatically saves the information you enter and displays it in the text information window of the open data window. To enter and save information to a new patient file:

1. Select (click on) File from the Main Menus.

   A drop down list of menu items appears.

2. Select (click on) New Patient File from the drop-down list.

   This activates an empty collection screen.

3. Select (click on) Collection from the Main Menus.

   A drop down list of items appears.

4. Select (click on) Begin Collection from the Collection drop-down menu.

   The Scout program activates an empty Patient Information display.

5. Click the mouse cursor in the Last Name field.

   This activates a text cursor in that field.

6. Type the patient's last name at the text cursor.

Copyright © 2003-2004
Bio-Logic Systems Corp

7. Repeat the previous step to enter the information you want in the remaining text fields.

8. Select (click on) either the Left or the Right radio button.

   The program displays a bullet mark to reflect your selection.

9. Select (click on) the OK button.

   This closes the display and saves the new patient information. Scout shows the information you entered in the text information window on the upper, right side of the open data window.

   OR

10. Select (click on) the Clear All button to "erase" any information you have typed in the text fields. This is a useful tool because it lets you begin again if you make an error.

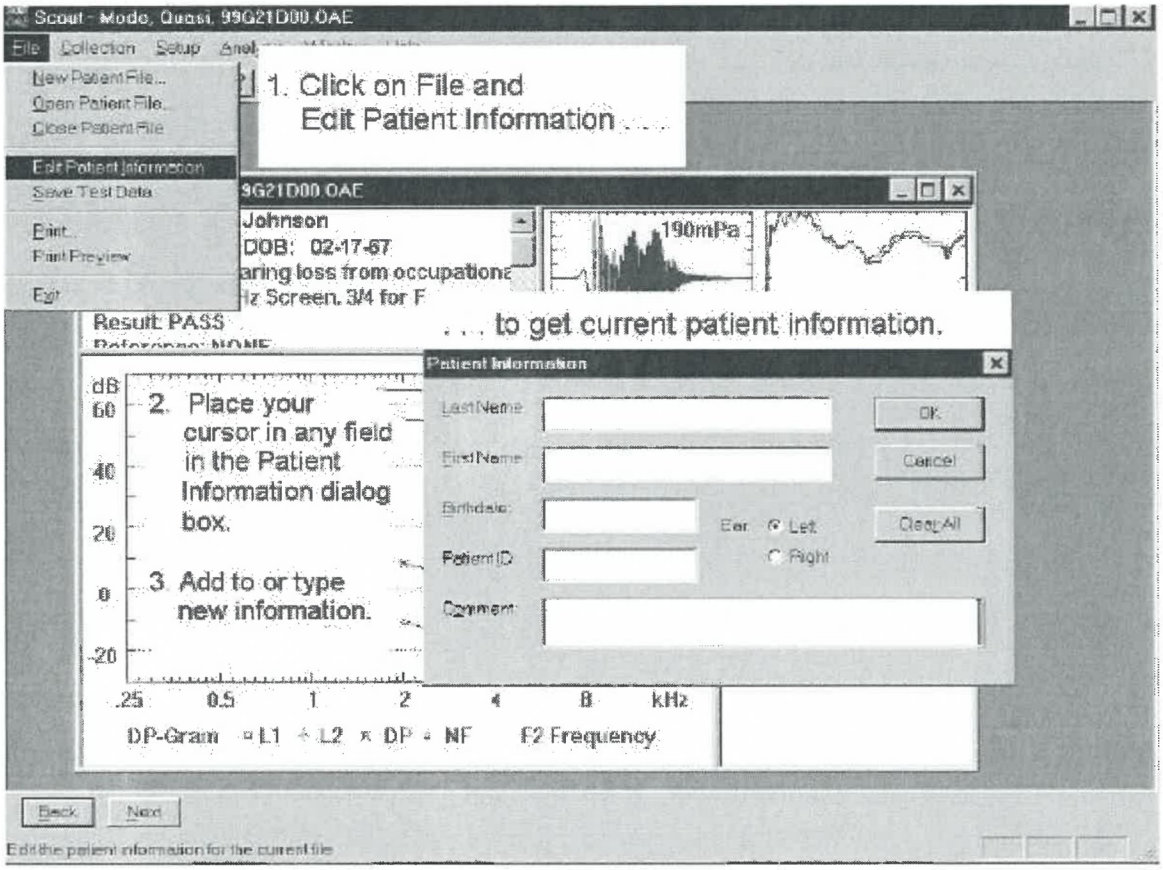
    OR

11. Select (click on) the Cancel command button to close the display without saving new patient information.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to edit a Patient Information display

To edit information in a Patient Information display, follow these steps:



1. Open the patient file that you want.

   Turn to "How to open an existing patient file."

2. Select (click on) File from the Main Menus.

   A drop-down list of menu items appears.

3. Select (click on) Edit Patient Information from the drop-down list.

   The Scout program activates the Patient Information display that applies to the patient file you have opened.

4. Click on any text field where you want to change information.

   This places a text cursor in that field.

Copyright © 2003-2004
Bio-Logic Systems Corp

5. Use the computer's keyboard (including the Backspace and Delete keys) to type in changes

   OR

6. Drag the mouse cursor across the field to highlight all the information in it

   AND

7. Type in new information

8. Repeat the previous steps for every text field you want to change.

Note: To erase all text in every field simultaneously, select (click on) the Clear All button. To cancel a Clear All command (or any of the current edits in the menu), select the Cancel button to escape the menu.

9. Select (click on) either the Left or the Right ear radio button.

   The program displays a bullet mark to reflect your selection.

10. Select (click on) the OK button.

    Scout asks you if you want to save the edits. Yes saves the changes you have made. No cancels the edits.

    OR

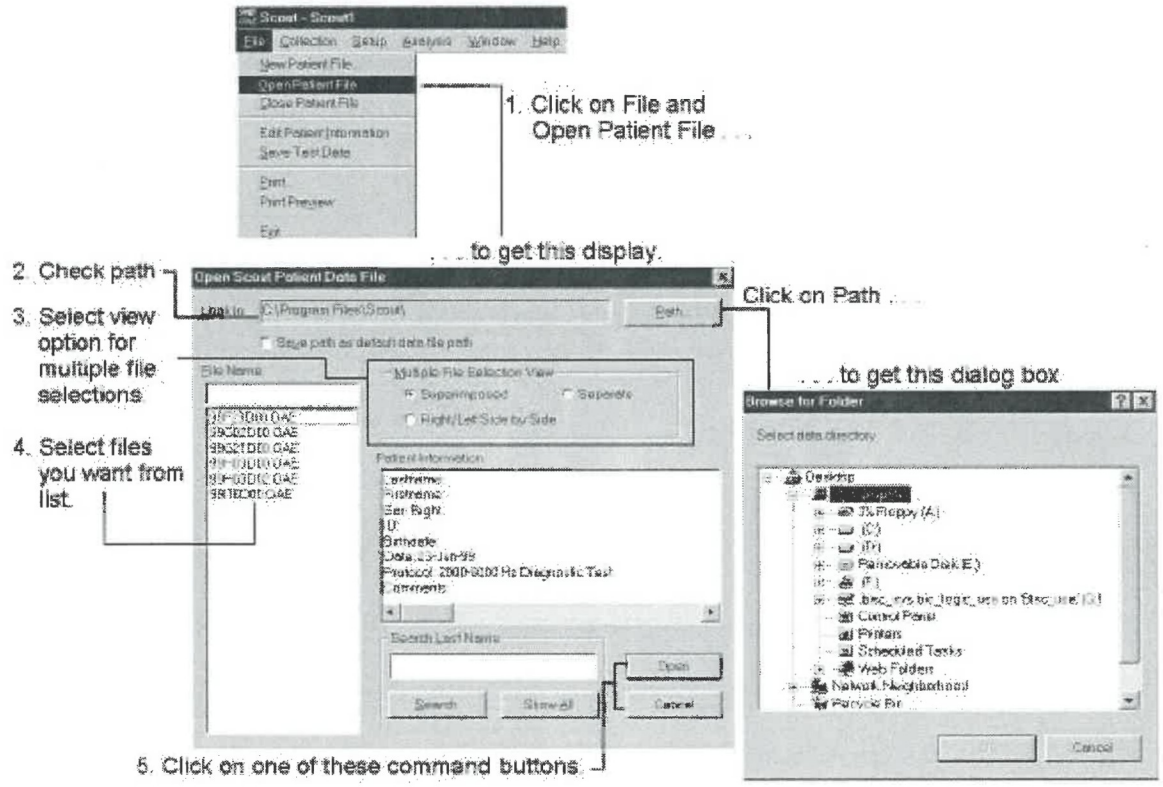
11. Select (click on) the Clear All button to "erase" any information you have typed in the text fields. This is a useful tool because it lets you begin again if you make an error.

    OR

12. Select (click on) the Cancel command button to close the display without saving any data.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to open an existing patient file


1. Click on File and Open Patient File . . .
. . . to get this display.
2. Check path
3. Select view option for multiple file selections
4. Select files you want from list
5. Click on one of these command buttons
Click on Path . . .
. . . to get this dialog box

To open an existing patient file, follow these steps:

1. Start the Scout program.

   Turn to "The Scout start screen."

2. Select (click on) File from the Main Menus.

   A drop-down list of items appears.

3. Select (click on) Open Patient File from the drop-down list.

   The Scout program activates the Open Scout Patient Data File display.

4. Make sure the drive path that you want appears in the Look in: field at the top of the display.

Note: Click the Path command button and browse for the correct drive and folder, if necessary.

Copyright © 2003-2004
Bio-Logic Systems Corp

5. Click on the view option that you want to use for displaying multiple files in the Multiple File Selection section of the screen.

   The program places a bullet in the radio button that you select:

   Superimposed— displays up to six selected files in the same data window. Users can display the test information of any displayed file by clicking on the desired patient name in the upper, right corner of the window and then clicking on a DP-Gram data point in the same color.

   Separate— displays each selected file in an individual window with the standard window display. Users can tile or cascade the windows for easier viewing.

   Right/Left Side by Side— displays the right and left ear tests of selected files in a single, split window. In this type of window format, the program automatically displays all right ear tests on the right side of the window and all left ear tests on the left side of the window. Users can as many as six files in any combination of tests in the split window.

6. Select (click on) a file in the File Name list.

   This selects a single file. The program highlights the file and enters the file name in the File Name field.

   OR

7. Select (click on) the first or last file you want in a series of files from the list.

8. Press the Shift key and the Up or Down arrow key on the computer's keyboard simultaneously.

   This selects all of the files above or below the original selection (maximum six). These files appear in order in the File name field.

   OR

9. Press and hold down the Ctrl key on the computer's keyboard.

10. Select (click on) multiple files at random from the file list (maximum six).

    Scout highlights the files and enters them in the File Name field.

Note: When you select multiple files, the program displays the patient information for the last file you select.

11. Select (click on) the Open button.

    Scout displays the files you selected in the format you specified

Note: Users can view a list of all data files for a specific patient by entering the patient's last name in the Search Last Name field and then selecting the Search button. The program displays only data files for patients with that last name in the File Name field. To return to a complete list of available files, select the Show All button.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to perform a calibration

During the Calibration phase, the program delivers a transient stimulus (frequency sweep) through two loudspeakers (Channels A and B) from inside the probe for DPOAE tests and through Channel A for TEOAE tests. Scout then displays the ear canal response for each of these stimuli in the temporal domain and the frequency domain. The program uses the ear canal response information to calibrate the DPOAE test stimuli and to adjust for ear canal resonance characteristics. Then, it displays the temporal waveforms in the main graphics window and the spectra waveforms in the graphics window on the right side of the screen.

To initiate the Calibration phase of DPOAE testing:

1. Select (click on) Collection from the Main Menus
2. Select (click on) Begin Collection from the drop-down list

   OR

3. Choose the Begin R test or Begin L test icon.

   Scout performs a Check Fit procedure and then begins the Calibration Phase of DPOAE testing. If Calibration results are acceptable, the program automatically begins the DPOAE Measurement test phase.

4. Allow the program to complete DPOAE Measurement phase.
5. Note: If the Calibration results are unacceptable, the program displays a "Calibration Unsuccessful" message on the screen. To continue:
6. Reposition the probe in the patient's ear
7. Select Retry.

   This repeats the Calibration phase of the test.

   OR

8. Select Ignore.

   This begins the DPOAE Measurement phase regardless of the Calibration results.

   OR

9. Select Abort.

   This stops DPOAE testing.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to perform an DPOAE measurement

The Scout program automatically initiates the DPOAE Measurement test phase any time a calibration is acceptable. During the DPOAE Measurement phase, the program measures otoacoustic emissions from the ear canal.

As the loudspeakers in the probe begin emitting specified stimuli in the patient's ear canal, the program automatically starts measuring the ear's physiologic response. It displays information that relates to the averaging process in the status bar at the bottom of the screen as DPOAE averaging occurs. The program continues averaging for the current frequency condition until the test reaches the point time limit, the overall noise level, the amplitude, and/or the signal noise ratio criteria (per the test protocol).

As the program completes the DPOAE measurements of each frequency condition it displays the following graphics and text on the screen:

- Updated text information appears in the upper, left information window.
- The intensity of each pure tone stimulus level (as measured by the ear probe microphone) appears in the main graphics window.
- The amplitude of the distortion product emission and the noise floor appears in the main graphics window.
- The spectrum of the response for the current condition appears in the lower, right graphics window.

For TEOAE

The program performs an automatic, in-the-ear calibration and adjusts the stimulus intensity level to the protocol's target value. If the calibration procedure is successful, the program proceeds automatically to the averaging phase. There, the Scout Sport system presents a click stimulus and measures the TEOAE response.

The program implements measurement-based stopping rules as defined in the protocol. The test stops when the criteria for stopping have been met or when averaging reaches the maximum number of samples in the protocol.

If the protocol includes criteria for assigning a Pass or a Refer recommendation, the overall result of the test appears in the text area of the screen along with the TEOAE spectrum and temporal waveform. At the conclusion of the test, the program displays a dialog box through which you can choose to save the data to the disk or discard the data.

When all measurements are complete, the program displays the "Save the file?" message on the screen. The data stays on the screen until you shut down the program, but the system does not save the data to memory unless you select the "Yes" option. Select Yes to save the data or No to discard it.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use the Collection Information windows

As collection occurs, the Scout program continually updates and displays test data in designated information windows on the program screen. Use the following steps to locate specific information on collection data.

To find updated figures for the last plotted DPOAE measurement:

1. Locate the information window in the upper, left corner of the program screen.

   The window shows the last DPOAE measurement that the Scout completed.

Note: The status bar on the bottom shows the artifact rejection status and the current dp/nf values for the test frequency currently under collection. It also shows the number of sets remaining.

How to save test data

To save patient data that was not saved immediately after the test:

1. Select (click on) File from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Save Test Data from the drop-down list.

   The program saves the current patient and test information for the current data file. It then displays a message verifying that the file was saved.

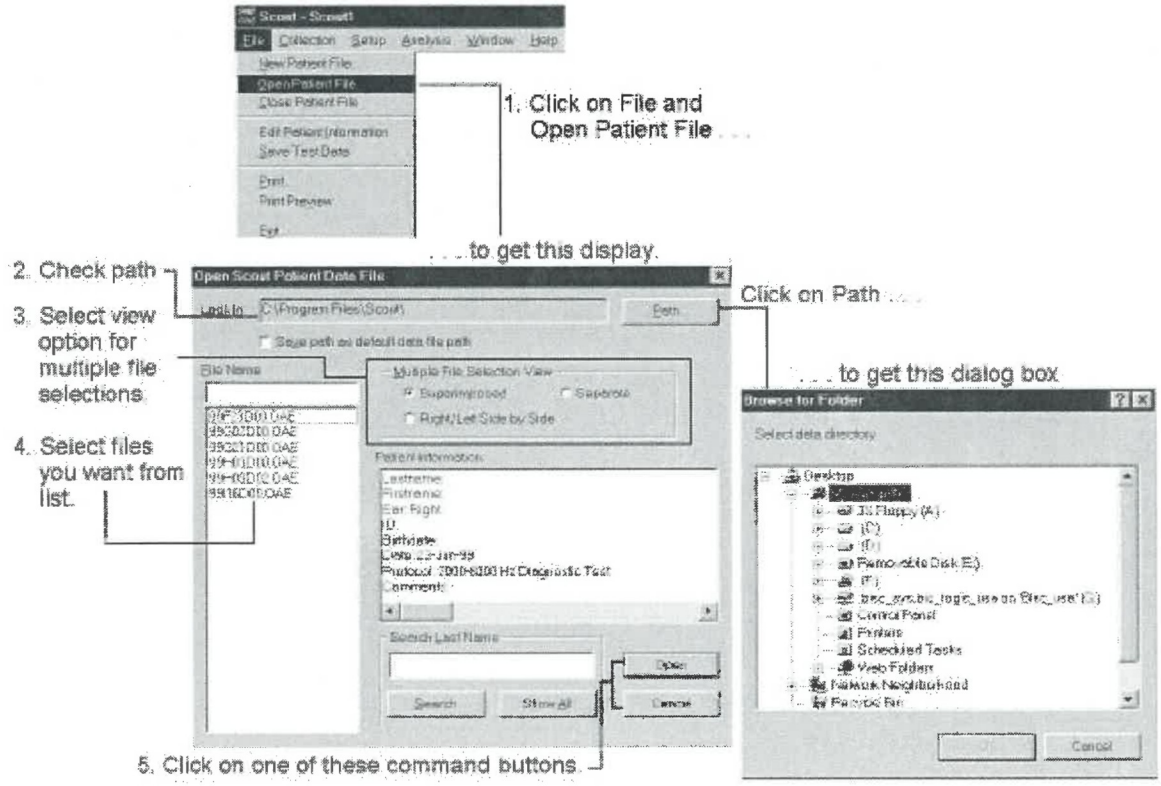
Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to preview a patient file you want to print


1. Click on File and Open Patient File . . .
. . . to get this display.
2. Check path
3. Select view option for multiple file selections
4. Select files you want from list.
5. Click on one of these command buttons.
Click on Path . . .
. . . to get this dialog box

This menu option lets you view a full-page layout of a patient report as it appears when the system printer outputs it. To view a printout:

1. Select (click on) File from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Print Preview from the drop-down list.

   The program displays the report as it appears in a printout.

3. Select (click on) the Next Page and Prev Page buttons at the top of the screen to move through multiple page documents.

   AND

Copyright © 2003-2004
Bio-Logic Systems Corp

4. Select (click on) the Two Page button to view two pages at a time.

   AND

5. Select (click on) the Zoom In or Zoom Out buttons to make the page size larger or smaller.

   Users can also click anywhere on the page to change to the next magnification size.

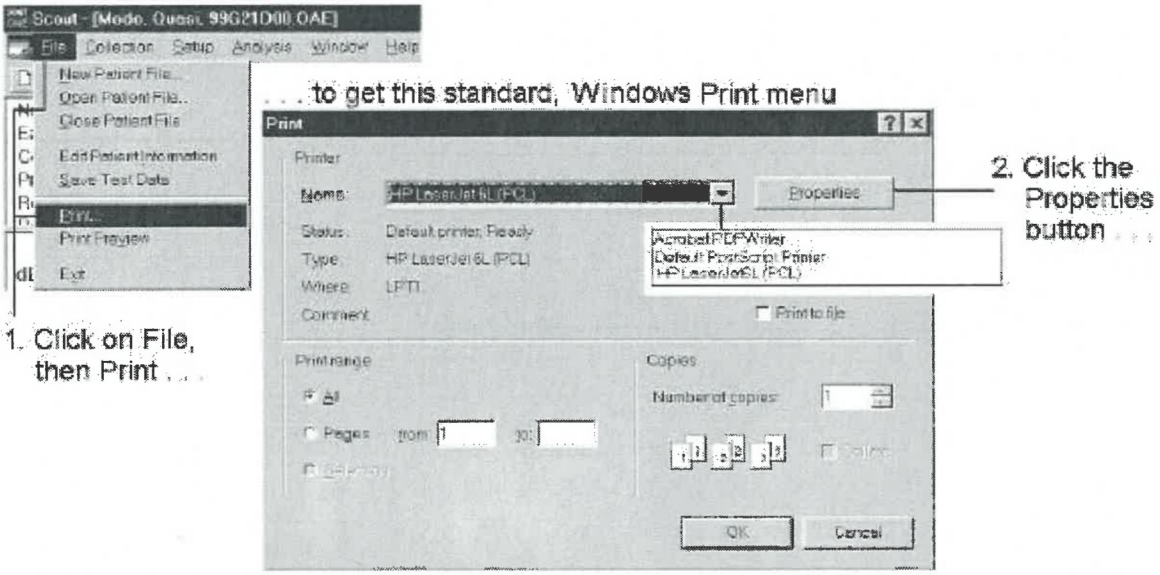
6. Select the Print button to exit the preview screen and display the Print menu.

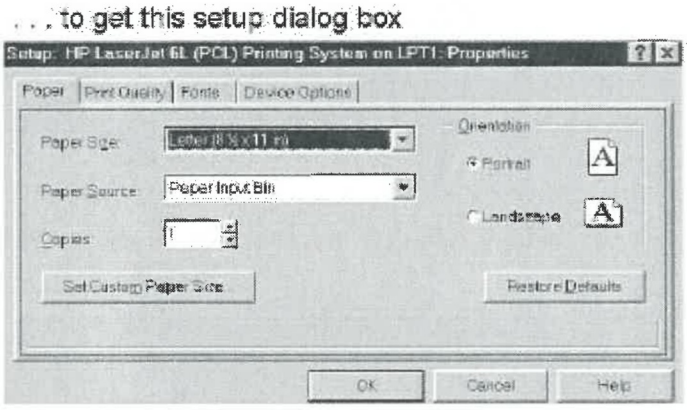
   OR

7. Select the Close button to exit the preview screen without printing.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to set up a printer





The Scout program currently supports any Windows compatible printer to print out patient data as either a screen plot or a report. To setup a system printer:

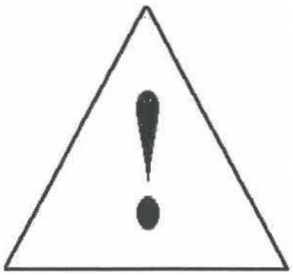
1. Select (click on) File from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Print from the drop-down list.

   This displays a standard, Windows Print dialog box.

Copyright © 2003-2004
Bio-Logic Systems Corp



CAUTION

MICROSOFT CORPORATION HAS THOROUGHLY DOCUMENTED THE PRINT DIALOG BOX. ILLUSTRATED PROCEDURES FOR ITS USE APPEAR IN THAT DOCUMENTATION. THIS DOCUMENTATION IS USUALLY AVAILABLE ON THE CD THAT ACCOMPANIED YOUR COMPUTER'S SOFTWARE SYSTEM. THE REMAINDER OF THE INSTRUCTIONS IN THIS PROCEDURE NEITHER CONTRADICT NOR SUPERCEDE ANY OF MICROSOFT'S INSTRUCTIONS. SHOULD QUESTIONS ARISE ABOUT THE PRINT DIALOG BOX OR ANY OTHER DIALOG BOX CONTROLLED BY THE MICROSOFT CORPORATION'S WINDOWS OPERATING SYSTEM SOFTWARE, FOLLOW THE MICROSOFT CORPORATION'S DOCUMENTATION.

3. Check the Printer field to verify that the system is "pointing" to the printer you want to use.

   Click on the down arrow next to the Printer field and select the printer you want, if necessary.

4. Check the Print Range section and:

   —Select All to print all pages

   OR

   —Select Pages to print only pages within a specified range.

Note: Enter the first page number in the "from" field and the last page number in the "to" field.

5. Check the Copies section and verify that the Number of Copies field shows the number of copies you want.

   Change the value in this field, if necessary.

6. Select (click on) the Properties button a standard, Windows Properties window (with tabs).
7. Select (click on) the Paper tab at the top of the window.

   The Windows displays the values in the Paper tab.

8. Select (click on) the Portrait radio button.

   This sets the printer to orient the paper in Portrait (8 1/2 x 11) format.

9. Check paper size and paper source; correct if necessary.
10. Select (click on) all other tab menus in the Properties window.
11. Make sure each tab's selections match your needs; correct if necessary.
12. Click on the OK command button.

    This closes the Properties window and saves the printer settings you have selected until you close the Scout program.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to print a patient file

During Analysis, the Scout program prints patient data in report format. Printed reports include demographic information, numeric data in tabular form, and graphic data. To print patient data as a report:

1. Select (click on) File from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Print from the drop-down list.

   This displays a standard, Windows Operating System Print dialog box. (See The Print Item.)

3. Make sure all menu options are correct; make any changes necessary.

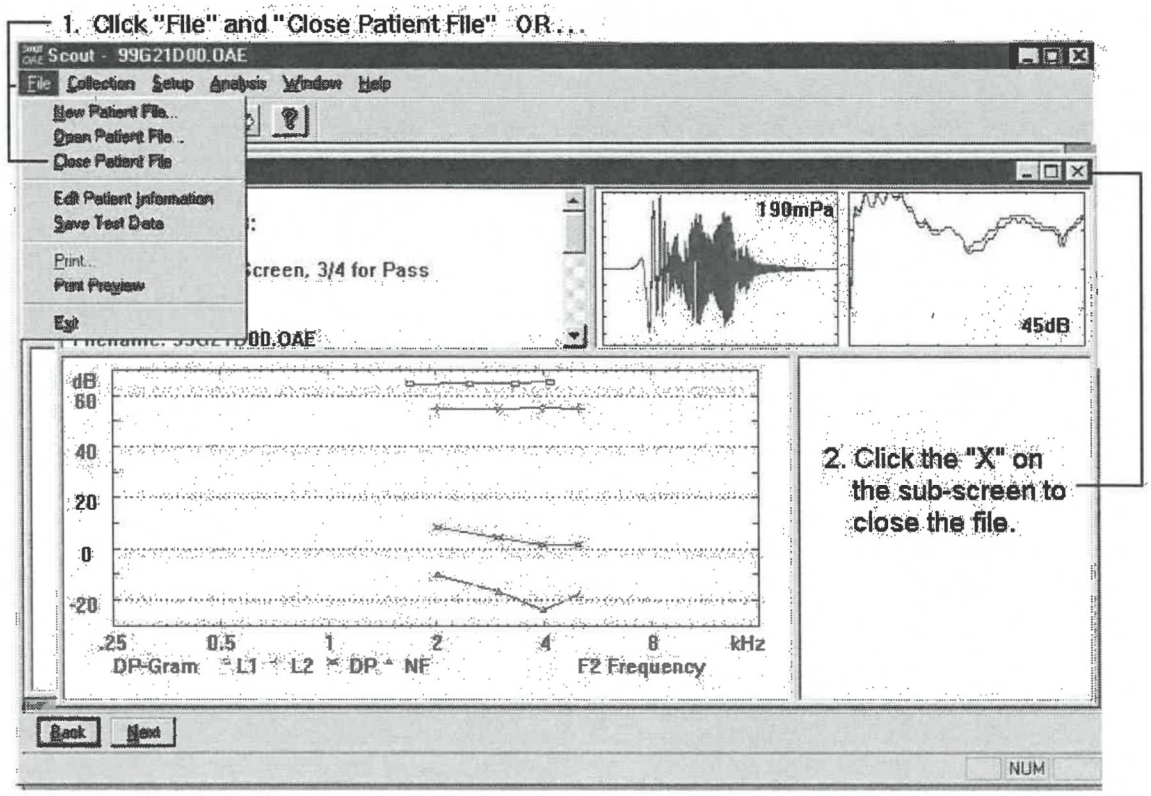
   Turn to How to set up a printer.

4. Select (click on) the OK button.

   This closes the Print dialog box and prints the patient data.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to close a patient file



This File menu option closes the currently displayed or active patient data file on the program screen. If more than one file is open, the next to the last opened data file automatically becomes active. To close an active data file:

1. Select (click on) File from the Main Menus.

   A drop-down list of menu items appears.

2. Select (click on) Close Patient File from the drop-down list.

   OR

3. Click on the "X" button at the top right of the file screen you want to close.

   The program closes the patient data file on the display. If additional files are open, the program displays the data file you last opened as the currently active file.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

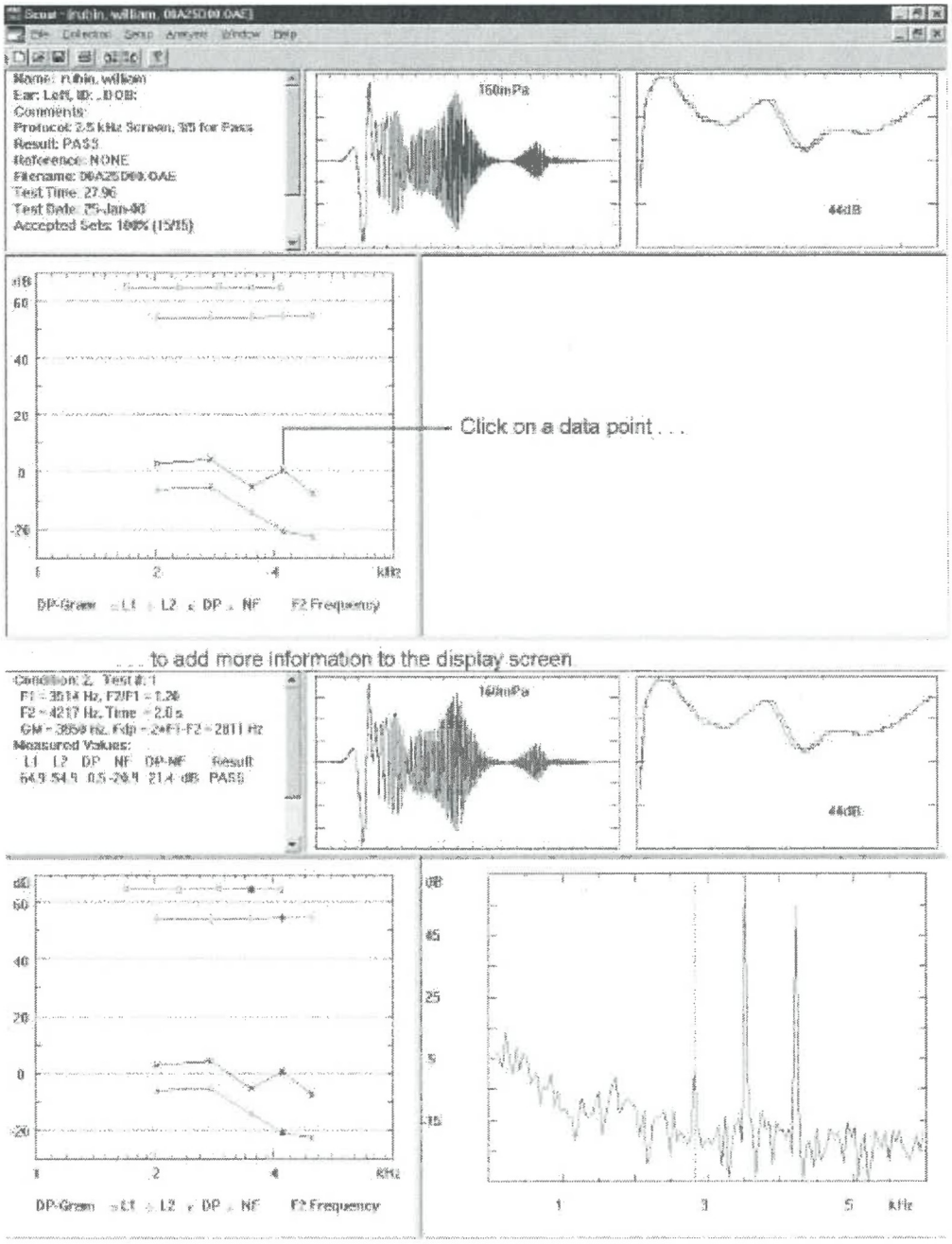
Copyright © 2003-2004
Bio-Logic Systems Corp

How to analyze DP collected data

At the end of a test, the program displays the DP-Gram with the collected data. Here, you can select individual data points on the DP gram for analysis, open additional patient files for comparison, or start a new collection. You can also change the window display to reflect parameters that you entered in the Scout Display Setup Menu.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to view DPOAE data point information during analysis



During Analysis, the Scout program displays information about the currently selected DP-Gram data point in the upper, left text window of the program screen. In cases where multiple files appear in the same window, the left text window displays the data point information for the highlighted file in the upper, right section of the window. Data point information appears under the following headings.

Copyright © 2003-2004
Bio-Logic Systems Corp

Condition:	The sequential number of the selected frequency condition in the order it was measured.
Test #	The sequential number used for each test when the protocol performs more than one test run.
F1	The lower frequency (Hz) primary signal used in the Distortion Product measurement.
F2	The higher frequency (Hz) primary signal used in the Distortion Product measurement.
F2/F1	The ratio of two stimulus frequencies.
Time	The amount of time that data was collected for the test condition.
GM	The Geometric Mean frequency.
Fdp	The Distortion Product frequency.
L1 Measured Value	The intensity level (dB) of the lower frequency primary tone.
L2 Measured Value	The intensity level (dB) of the higher frequency primary tone.
DP Measured Value	The intensity level (dB) of the Distortion Product (DP).
NF Measured Value	The intensity level (dB) of the Noise Floor (NF).
DP-NF Measured Value	A calculated value, which is obtained by subtracting the Noise Floor from the DP amplitude.
Result	This result (Pass or Refer) depends on the criteria you set for the data point you selected (see the procedure that follows this table and the illustration on the facing page).

To view information about individual data points in the DP-Gram

1. Place the mouse cursor on the data point that you want to analyze.
2. Click the LEFT mouse button.

   —Test information for the data point you selected appears in the upper, left information window of the program screen.

   —The spectrum of that data point appears in the right graphics window.
3. Repeat these steps for any other data points you want to view from the DP-Gram on the display

   OR
4. Load additional files for comparison (turn to "How to open an existing patient file").

Note: You can change the size of the display graphics windows for easier viewing. To arrange multiple open windows for simultaneous viewing, select either the Tile Horizontally or Tile Vertically menu option.

Copyright © 2003-2004
Bio-Logic Systems Corp

To quickly change the display parameters of the current display

1. Select (click on) Analysis from the Main Menus.

2. Select (click on) Activate Display Setup.

   Scout changes all display parameters in the open data window to the parameters currently in the Scout Display Setup menu. For illustrated information, turn to "How to use the Display Parameters item."

Note: This feature only affects the display parameters of the active data window. If multiple data windows are on the screen, the non-active windows are not affected.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to view DPOAE data point spectra during analysis

This section explains how to view the response spectrum of any point on a displayed DP-Gram after completing a test or loading previously collected data files. When multiple files appear in the same data window, users must highlight the patient file they want to see in the upper, right corner of the window.

To view a response spectrum for an individual test condition result:

1. Place the mouse cursor on the data point you want.
2. Press and release the LEFT mouse button to highlight the data point.

   The program displays:

   —The response spectrum for the data point in the adjoining graphics window

   —The corresponding numeric data in the upper left text window.

Note: You can enlarge the response spectrum window for better viewing.

Copyright © 2003-2004
Bio-Logic Systems Corp

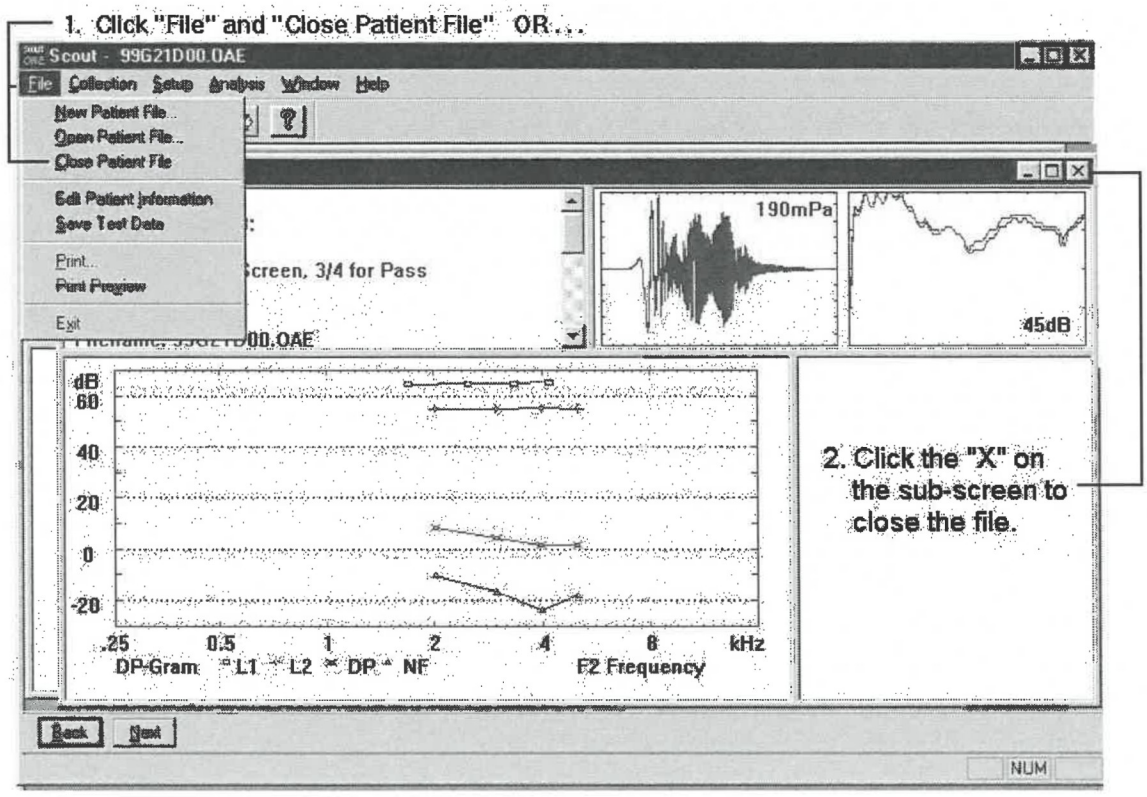
How to view DPOAE test file information during analysis

Right click on DP Gram window to make general information appear for a file. If you display multiple files in one window, select the data set you want in the upper right data list window. During Analysis, the patient and test information for the current file appears in the upper, left window of the screen under these headings:

Name:	The patient name in the Patient Information display (turn to "How to edit a Patient Information display").
Ear:	The ear being tested (right or left).
ID:	The patient identification number entered in Patient Information display.
DOB:	The patient date of birth entered in the Patient Information display.
Comments:	Shows any comments entered in the Patient Information display.
Protocol:	The name of the protocol for the test.
Reference:	The name of the reference data set for the test (or None).
Filename:	The filename for the patient data.
Test Date:	The date of the test.
Test Time:	The total averaging time needed to complete the test.
Accepted Sets:	The percentage and number of accepted sweeps during the entire test.
Result	This result (Pass or Refer) is only available if a Pass/Refer screening protocol is active during Collection and the test was performed with the same parameters.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to exit the Scout program



To exit the Scout program:

1. Select (click on) File from the main menu.

   A drop-down list of menu items appears.

2. Select (click on) Exit from the drop-down list.

   OR

3. Click on the "X" button at the top, right of the Main Scout screen.

   A message: Are you sure you want to exit the program? appears on the screen.

4. Select (click on) Yes to exit the Scout program or No to abort the exit.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

SPECIAL OPERATING PROCEDURES

How to use the Reset Hardware menu item

Select this menu item to test and troubleshoot the cable connection between the Scout Sport box or AuDX PLUS and the host computer. The program software sends and receives a test signal to and from the box to verify that the serial cable connects to the correct serial port and is functioning correctly.

To test the serial cable connection between the host computer and a Scout Sport or AuDX PLUS box:

1. Select (click on) Collection from the Main Menus.
2. Select (click on) Reset Hardware.

The program tests the serial port and cable connections. If this message:

Reset complete. Hardware is ON. Press any key or mouse to continue.

appears on the screen, the cable is functioning correctly. Follow the directions on the screen to exit the Reset Hardware window.

If this message:

Communication fault. Please check hardware connections and settings.

appears on the screen, the cable is either incorrectly connected, not functioning, or the Scout configuration file doesn't specify the correct COM port. Select OK to clear the message, then troubleshoot as follows.

NOTE: You may also need to charge the battery.

To troubleshoot a Reset Hardware error message:

1. Make sure that the serial cable connects securely the correct serial port.

   If the cable is loose or in the wrong port:

2. Reconnect the cable to the correct port.
3. Re-select the Reset Hardware menu option.
4. Make sure that the cable connection to the Scout or AuDX PLUS box is completely plugged in.
5. Re-select the Reset Hardware menu option.

Copyright © 2003-2004
Bio-Logic Systems Corp

6. Plug the power supply to the Sport box to make sure that a low battery charge is not causing the reset error

Note: If the power supply is already in use, verify all cable connections are secure. An Auto Detect feature in the system parameters menu can automatically detect the correct COM port. Manually set the COM port with System parameters menu. The AuDX PLUS system has a rechargeable battery.

7. Re-select the Reset Hardware menu option.

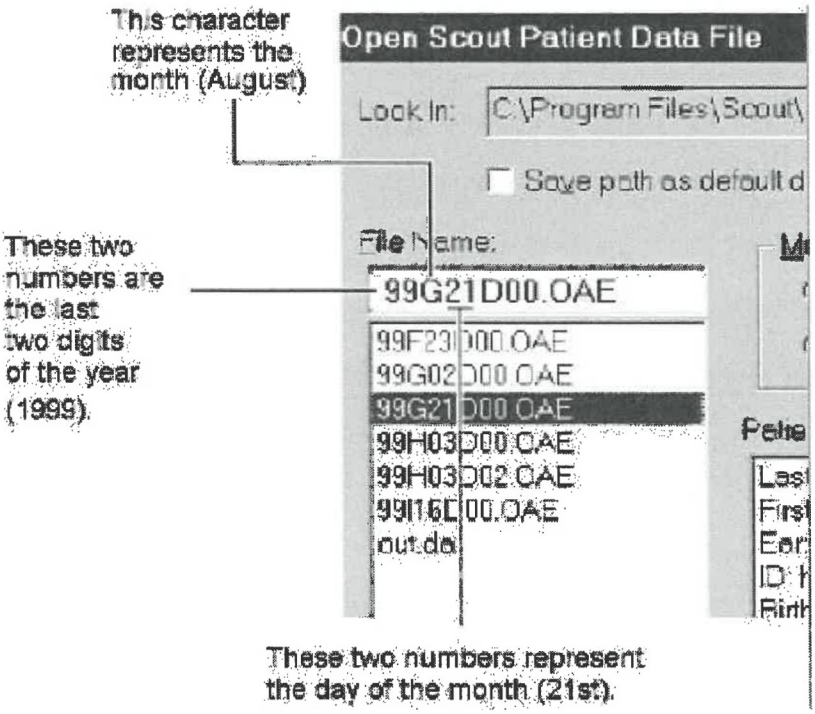
   Where the Scout box functions on a laptop system but does not function on a docking station:

8. Verify all connections between the docking station and the laptop system are secure.

9. Verify the docking station is using the correct COM port functions and connections.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to work with filename codes



The Scout program codes each filename according to date and sequential order. Understanding the code allows users to quickly identify specific files by their name. To determine the date and sequential order of a data filename:

- The first two characters (displayed as numbers) represent the last two digits of the year.
- The third character (displayed as a letter) represents the month.
- The fourth and fifth characters (displayed as numbers) represent the day of the month.
- The seventh and eighth characters represent the numerical order the file was created.

In the example, 99G21D00.DPOAE, the file name implies that a user created this file on August 21, 1999. The "00" implies that this was the first file created in the sequence of files on this display.

Note: The sixth character (displayed as a letter) appears in all data files. A "D" in a file name stands for DPOAE files. A "T" in a file name stands for TEOAE files.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to identify a file by its extension

The Scout program creates more than one type of file during a single data collection. Each file uses the same filename. The extension for this file name identifies how the Scout program uses the file.

The example below shows the names of the files created from the fourth DPOAE test performed on April 26, 1996.

96D26D03.**DPOAE** Collection Data File in ASCII format

96D26D03.**BN2** Collection Raw Data File

The example below shows the names of the file created from the tenth TEOAE test performed on May 26, 2000.

00E26T09. **TE** ASCII file format with test information and numeric results

00E26T09. **TN1** binary file with spectral information containing calibration and test data

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use pre-set screening DP test protocols

The Scout Sport software includes pre-set screening protocols that typically work in DPOAE screening programs to detect hearing problems in newborns. Each protocol automatically displays a Pass or Refer result at the end of the test as well as in the report printout. Although you cannot edit these types of protocols from within the Scout program, you can make contact with Bio-logic Customer Support for a screening test protocol with the modifications you want. The following information shows the similarities and differences for all screening protocols included with the Scout software.

Screening Test Protocol Similarities:

All screening test protocols have the following setup parameters in common.

Note: Cross check all values with your install directory protocols. You can view the protocol files of type *.lst. Use the Notepad program to see them

Recording/Stimulus Parameters

L1	65 dB SPL
L2	55 dB SPL
F2/F1 Ratio	1.2
Minimum # samples	40
Sample size	1024 points (20 msec sample)

Stopping Rules

Minimum DP amplitude	-5 dB SPL
And	
Minimum DP-NF amplitude	8 dB SPL
or	
Minimum Noise Floor Amplitude	-17 dB SPL
or	
Time Out	15 sec (above 3 kHz)
	20 sec (3 kHz and below)

Copyright © 2003-2004
Bio-Logic Systems Corp

Pass/Refer Criteria

Minimum DP amplitude	see protocol descriptions below
And	
Minimum DP-NF amplitude	6 dB
Number of frequencies for Pass	see protocol descriptions below

Screening Test Protocol Differences

The differences between screening test protocols occur in the F2 frequencies in the test, the number of frequencies in the test, and the number of frequencies that must meet the pass criteria to achieve a Pass result at the end of the test. The DP amplitude pass/refer criteria come from data published by Gorga, *et.al.*

2-5 kHz Screen, 3 of 4 for Pass

F2 frequencies	DP amplitude for Pass (dB SPL)
5014	-6
3983	-5
2999	-8
2015	-7
Number of frequencies to Pass the screen:	3

2-5 kHz Screen, 4 of 6 for Pass

F2 frequencies	DP amplitude for Pass (dB SPL)
5014	-6
4217	-5
3561	-5
2999	-8
2530	-8
2062	-7
Number of frequencies to Pass the screen:	4

Copyright © 2003-2004
Bio-Logic Systems Corp

2-5 kHz Screen, 3 of 5 for Pass

F2 frequencies	DP amplitude for Pass (dB SPL)
5014	-6
4217	-5
3514	-5
2765	-8
2015	-7
Number of frequencies to Pass the screen:	3

2-6 kHz Screen, 4 of 6 for Pass

F2 frequencies	DP amplitude for Pass (dB SPL)
5998	-7
3749	-5
2343	-7
4779	-6
3046	-8
1968	-7
Number of frequencies to Pass the screen:	4

Copyright © 2003-2004
Bio-Logic Systems Corp

2-6 kHz Screen, 3 of 5 for Pass

F2 frequencies	DP amplitude for Pass (dB SPL)
5998	-7
5014	-6
3983	-5
2999	-8
2015	-7
Number of frequencies to Pass the screen:	3

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use Pre-set Diagnostic DP Test Protocols

The Scout Sport software includes pre-set diagnostic protocols that represent typical protocols used for diagnostics. Users can edit diagnostic test protocols from within the Scout software by making the necessary changes to the existing diagnostic protocol and saving it with a new name.

Screening Test Protocol Similarities

All screening test protocols have the following setup parameters in common.

Recording/Stimulus Parameters

L1 65 dB SPL

L2 55 dB SPL

F2/F1 Ratio 1.2

Minimum # samples 50

Sample size 1024 points (20 msec sample)

Stopping Rules

Minimum DP amplitude -5 dB SPL

and

Minimum DP-NF amplitude 8 dB SPL

or

Minimum Noise Floor Amplitude -17 dB SPL

or

Time Out 20 sec

Copyright © 2003-2004
Bio-Logic Systems Corp

Diagnostic Test Protocol Differences:

The differences between diagnostic test protocols occur in the range of F2 frequencies (as indicated in the protocol name) and the points per octave included in the test.

750-8,000 Hz Diagnostic Test

Points per Octave 2

2,000-8,000 Hz Diagnostic Test

Points per Octave 2

1,500-10,000 Hz Ototoxic Test

Points per Octave 4

Copyright © 2003-2004
Bio-Logic Systems Corp

TE Test Protocols

Four TE test protocols come with your software installation. You can edit these protocols to include parameters that more closely reflect your preferences. You can also create a new protocol by editing an existing protocol and giving it a new name before saving it. The protocols that come with the installation are:

70% at 3/3 freq. For Pass
70% at 3/4 freq. For Pass
70% for Pass, 1.2-3.5 kHz TE test
TE Test

The first 3 protocols are called screening protocols because Scout automatically displays a Pass or Refer recommendation at the conclusion of the test. The TE test protocol displays no Pass or Refer information.

The parameters that the Scout system uses for each of the four provided protocols appear in the tables that follow.

TE Screen, 70% at 3/3 freq. for Pass

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
Collection Parameters	Start Time (ms)		3.5
	End Time (ms)		12.0
	Ramp Time (ms)		1.0
	Samples per Set		32
	Maximum # Samples		512
	Target Amplitude (dB SPL)		80
	Usage		Freq. Band
	Pass/Refer Criteria		
	Frequency 1000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Frequency 1500 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No
	Frequency 2000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Frequency 3000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Frequency 4000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Stopping Criteria		
	Frequency 1000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Frequency 1500 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No
	Frequency 2000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes
	Frequency 3000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes
	Frequency 4000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Number Frequencies for Overall Pass		3 of 3
Display Parameters	Spectrum Freq. Range		6k
	Spectrum Level Range		40 dB
Advanced Parameters			
	Low Filter		1800 Hz
	High Filter		6000 Hz
	Rejection Threshold		20 mPa

TE Screen, 70% at 3/4 freq. for Pass

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
Collection Parameters	Start Time (ms)		3.5
	End Time (ms)		12.0
	Ramp Time (ms)		1.0
	Samples per Set		32
	Maximum # Samples		512
	Target Amplitude (dB SPL)		80
	Usage		Freq. Band
	Pass/Refer Criteria		
	Frequency 1000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Frequency 1500 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Frequency 2000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Frequency 3000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Frequency 4000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes
	Stopping Criteria		
	Frequency 1000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Frequency 1500 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes
	Frequency 2000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes
	Frequency 3000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes
	Frequency 4000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Number Frequencies for Overall Pass		3 of 4
Display Parameters	Spectrum Freq. Range		6k
	Spectrum Level Range		40 dB
Advanced Parameters			
	Low Filter		1800 Hz
	High Filter		6000 Hz
	Rejection Threshold		20 mPa

TE Screen, 70% for Pass at 1.2-3.5 kHz

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
Collection Parameters	Start Time (ms)		3.5
	End Time (ms)		12.0
	Ramp Time (ms)		1.0
	Samples per Set		32
	Maximum # Samples		512
	Target Amplitude (dB SPL)		80
	Usage		Overall
	Pass/Refer Criteria		
	1.2-3.5 kHz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	Yes

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Stopping Criteria		
	1.2-3.5 kHz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	Yes
Display Parameters	Spectrum Freq. Range		6k
	Spectrum Level Range		40 dB
Advanced Parameters			
	Low Filter		1800 Hz
	High Filter		6000 Hz
	Rejection Threshold		20 mPa

TE Test

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
Collection Parameters	Start Time (ms)		3.5
	End Time (ms)		16.6
	Ramp Time (ms)		1.0
	Samples per Set		40
	Maximum # Samples		2000
	Target Amplitude (dB SPL)		80
	Usage		Freq. Band

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Pass/Refer Criteria		
	Frequency 1000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No
	Frequency 1500 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No
	Frequency 2000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No
	Frequency 3000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No
	Frequency 4000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Include	No

Copyright © 2003-2004
Bio-Logic Systems Corp

Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Stopping Criteria		
	Frequency 1000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No
	Frequency 1500 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No
	Frequency 2000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No
	Frequency 3000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No

Copyright © 2003-2004
Bio-Logic Systems Corp

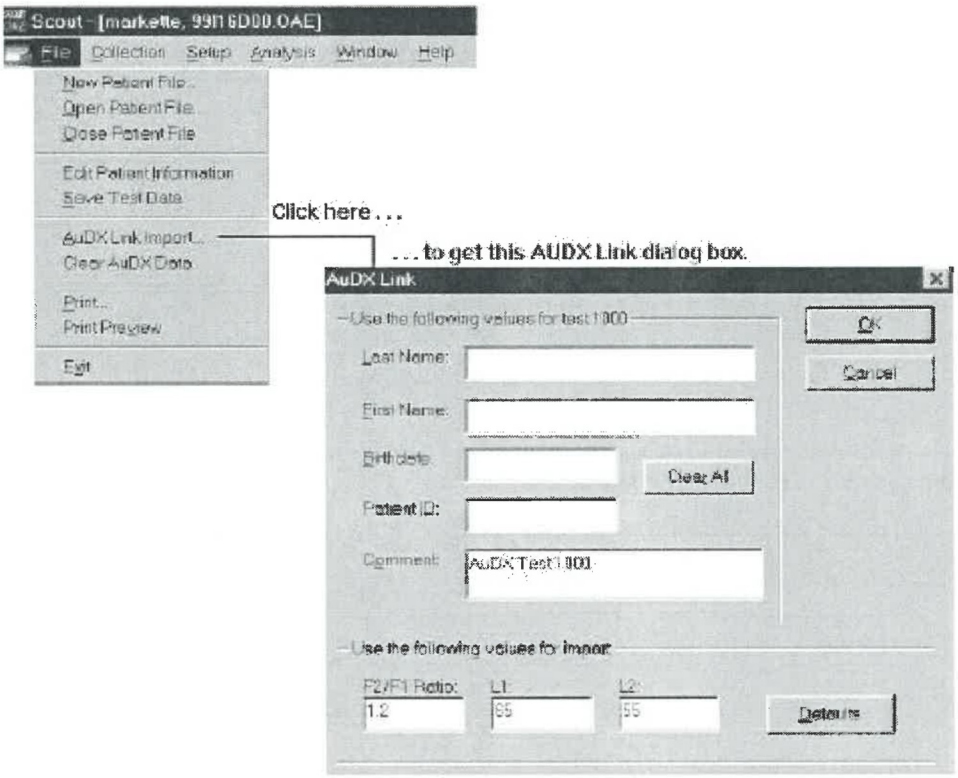
Protocol Setup Category	Parameter Name	Sub-parameter Name	Parameter Value
	Frequency 4000 Hz	Reproducibility (%)	70
		TE Amplitude (dB SPL)	-10
		TE/NF Amplitude (dB)	6
		Noise (dB SPL)	-10
		Include	No
	Number Frequencies for Overall Pass		0
Display Parameters	Spectrum Freq. Range		6k
	Spectrum Level Range		40 dB
Advanced Parameters			
	Low Filter		1800 Hz
	High Filter		6000 Hz
	Rejection Threshold		20 mPa

No standards currently exist for TEOAE screening in newborns. The parameters and pass/refer criteria in the protocols that come with your software come from information in the Handbook of Otoacoustic Emissions.[2] See this text for more information. Specifically, refer to Chapter 8 for the clinical applications of DPOAEs in children. You must determine whether you should change the parameters in these protocols to meet the goals of your screening program.

[2] Hall, J. W. (2000). *Handbook of Otoacoustic Emissions*. San Diego, California: Singular Publishing Group.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to import AuDX PLUS files



Users can import files from an AuDX PLUS testing device into the Scout DPOAE system. Follow these steps:

Note: Steps 1 through 4 are not necessary if the AuDX PLUS testing device is already connected to the computer you are using.

1. Connect the AuDX PLUS testing device to the personal computer via one of the computer's communication ports.
2. Connect the AuDX PLUS power supply.
3. Start the Scout program.
4. Select (click on) Setup and System.

   The System Setup dialog box appears.
5. Select (click on) the Auto Detect command button.

   The Scout system finds and sets up the communication port you have selected for the AuDX PLUS test device.
6. Select (click on) File and AuDX Link Import . . .

   The AuDX Link dialog box appears.

Copyright © 2003-2004
Bio-Logic Systems Corp

7. Use the information you have recorded to complete these fields for each test number being transferred:

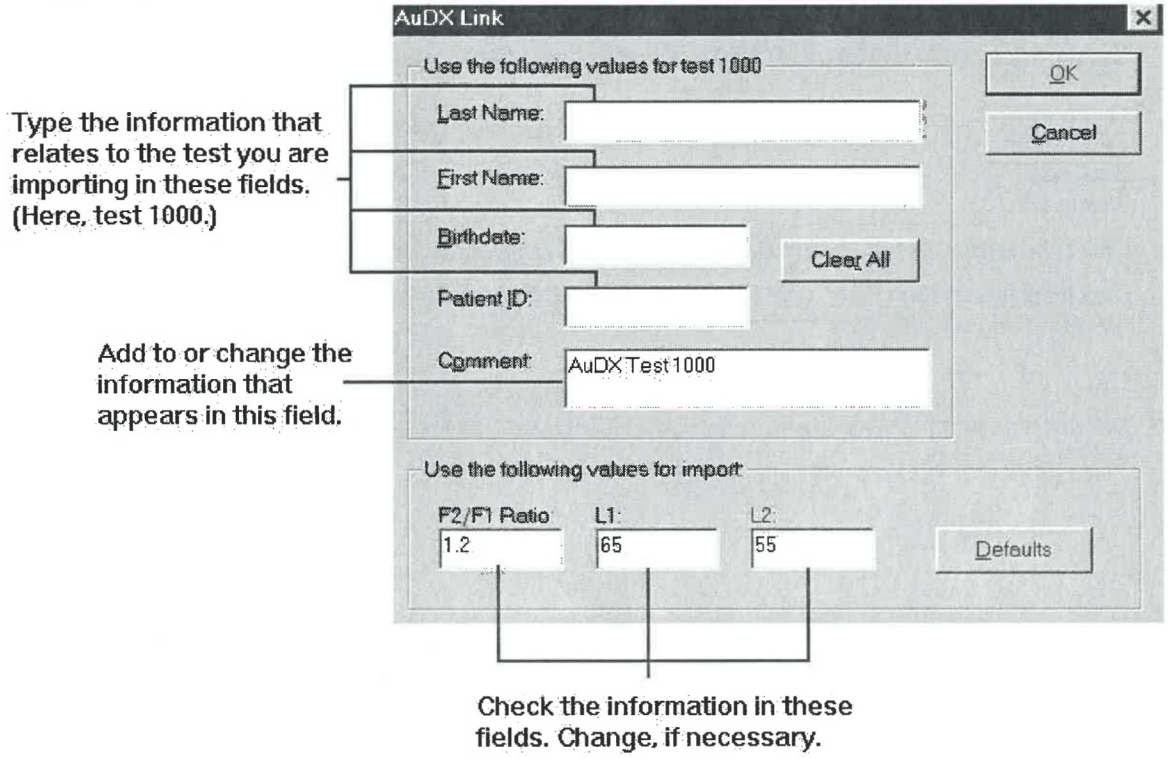
   Last Name:
   First Name:
   Birth date:
   Patient ID:

8. Check the information in the Comment field against your records; add to or change it, if necessary.
9. Check the information in the F2/F1 Ratio field, the L1 field, and the L2 field against your records; change the information if necessary

   OR

10. Select (click on) the Defaults command button to fill the F2/F1 Ratio field, the L1 field, and the L2 field with default values.

Copyright © 2003-2004
Bio-Logic Systems Corp



11. Select (click on) the OK command button to import and save the AuDX PLUS file.

    The Scout system readies the next AuDX PLUS file for import.

12. Select (click on) the Clear All command button if necessary.

    The new test is from a different patient. Selecting Clear All clears the data you entered for the previous AuDX PLUS file.

13. Repeat this procedure's steps until you have converted and imported all of the files in the AuDX PLUS testing device

    OR

14. Select (click on) the Cancel command button to close the dialog box and cancel all import and conversion activity.

    NOTE: The Cancel command button cancels the entire import process.

    OR

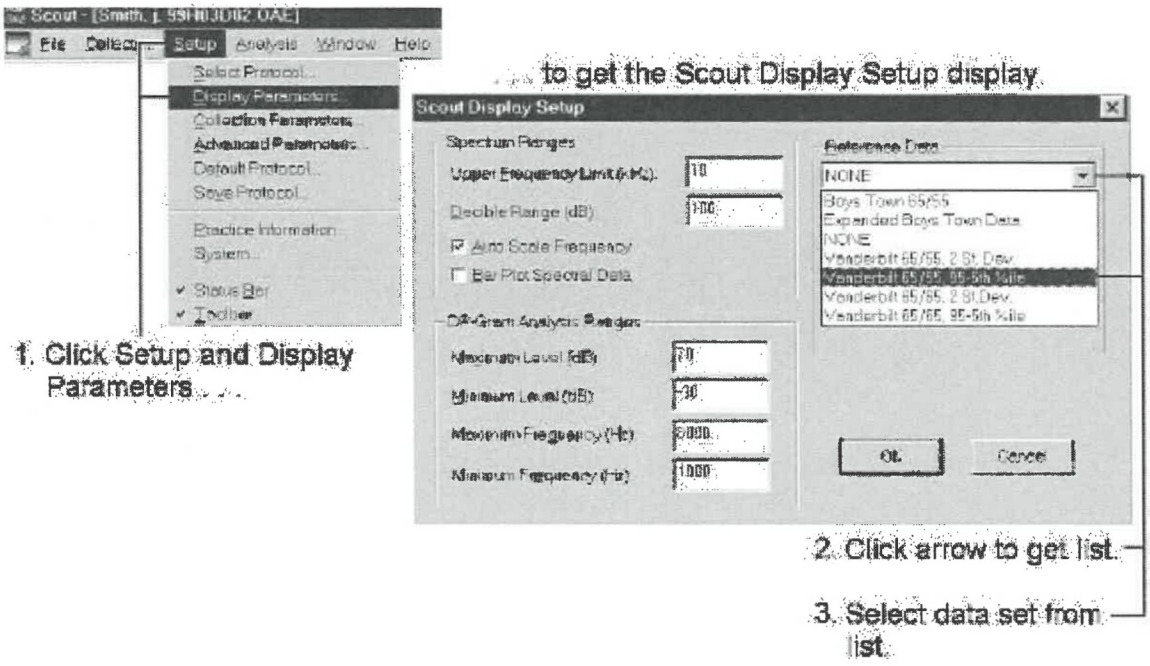
15. Select (click on) File and Clear AuDX data.

    This clears all data from the AuDX Link box.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to use DPOAE reference data

How to use a Reference Set



During collection, the Scout Sport DPOAE system lets you view a graphic display for:

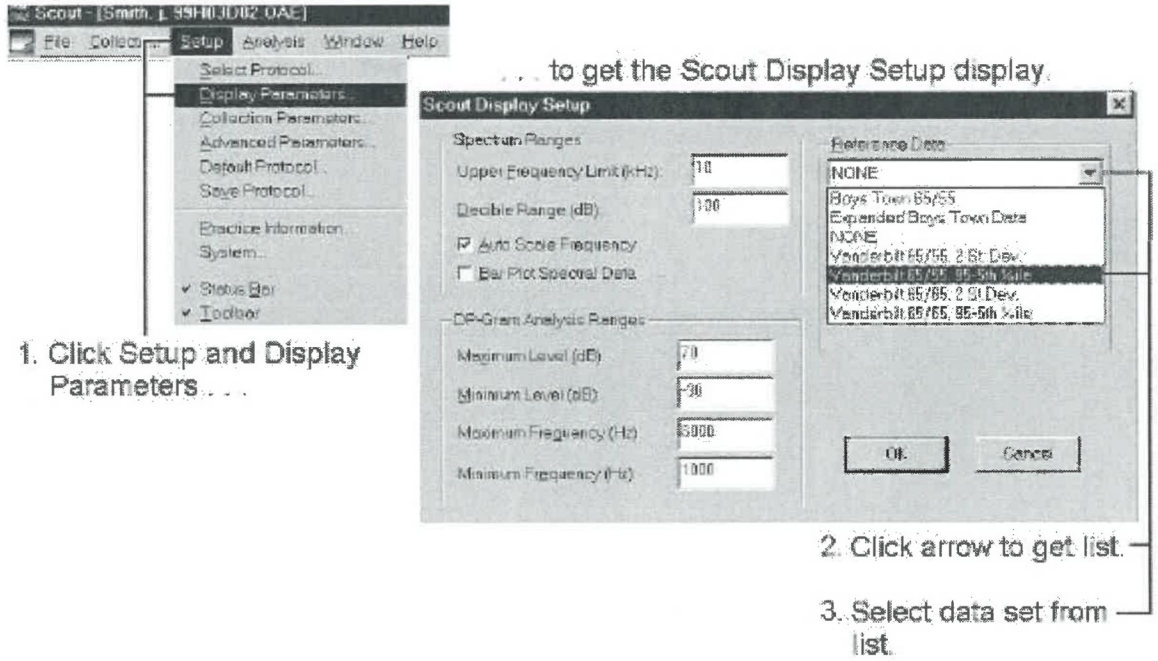
- The Vanderbilt 65/55, 95-5th Percentile Reference Set
- The Vanderbilt 65/65, 95-5th Percentile Reference Set
- The Vanderbilt 65/55, 2 St. Dev. Reference Set
- The Vanderbilt 65/65, 2 St. Dev. Reference Set
- The Boys Town 65-55 Reference Set
- The Expanded Boys Town Reference Data Set

Follow these steps:

1. Select (click on) Setup from the Main Menus.

   A drop-down list of menu items appears.

Copyright © 2003-2004
Bio-Logic Systems Corp



2. Select (click on) Display Parameters from the drop-down list.

   This activates a Scout Display Setup screen.

3. Select (click on) the down arrow in the Reference Data field.

   A drop-down list of reference data sets appears. Use the scroll bar to see all of sets of reference data available.

4. Select (click on) the reference data set you want to use.

   The program closes the list and displays the selection you chose in the Reference Data field.

5. Make sure all of the other data on the Scout Display Setup screen is correct.

   Use the mouse and computer keyboard to make any changes. (For more information, turn to "How to use the Display Parameters menu item.") A graphic display of the reference set you selected appears on the DP-Gram during collection.

Note: At the start of the collection, the values for L1 and L2 must be within 3 dB of the dB values used to collect the selected reference data. Otherwise, the reference data set does not appear on the DP-Gram.

To view the data set on the DP-Gram during Analysis, select Analysis from the main menu and Activate Display Setup from the drop-down menu. The program displays the selected data set on the DP-Gram.

6. Select (click on) Setup.

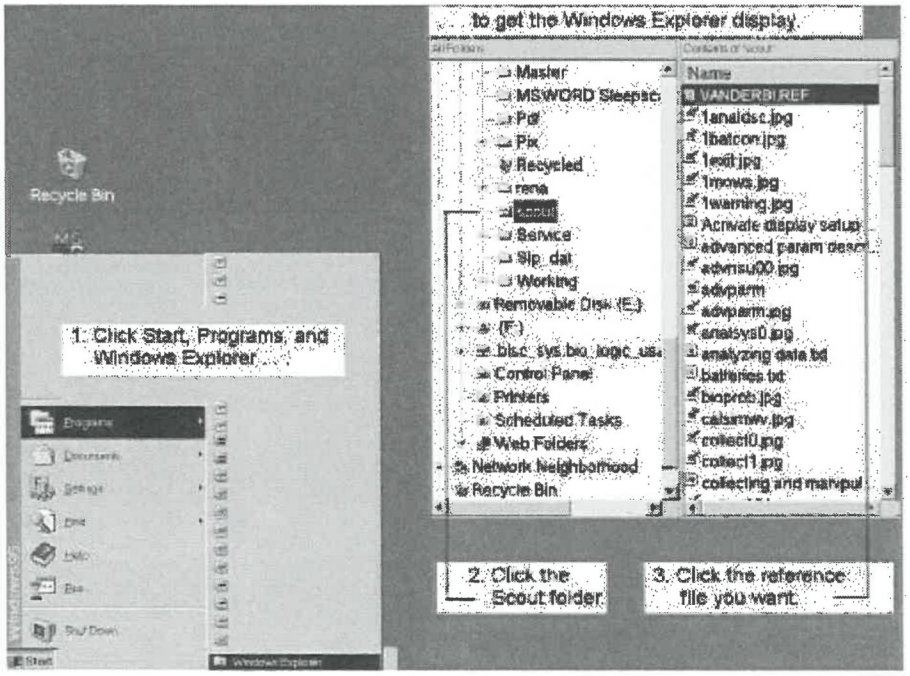
   This displays a drop-down list of menu items.

7. Select (click on) Save Protocol.

   This saves your changes permanently to the protocol you selected.

Copyright © 2003-2004
Bio-Logic Systems Corp

How to create a new DPOAE reference data file


to get the Windows Explorer display
1. Click Start, Programs, and Windows Explorer
2. Click the Scout folder
3. Click the reference file you want

Users can create new reference data files by editing existing files such as the VANDERBI.REF or the VANDEB00.REF data file in the PROGRAM FILES/SCOUT directory. To create a new reference data file:

1. Go to the Windows desktop.

2. Select (click on) the Start button, the Programs icon, and the Windows Explorer icon.

   This displays the Microsoft Corporation's Windows Explorer program.

3. Use the Windows Explorer program to find and open the Scout folder.

   Details about how to use Microsoft Corporation's Windows explorer program are in Microsoft's documentation for that product. This documentation usually appears on the CD-ROM that accompanies the Windows program. For more information, make contact with Microsoft.

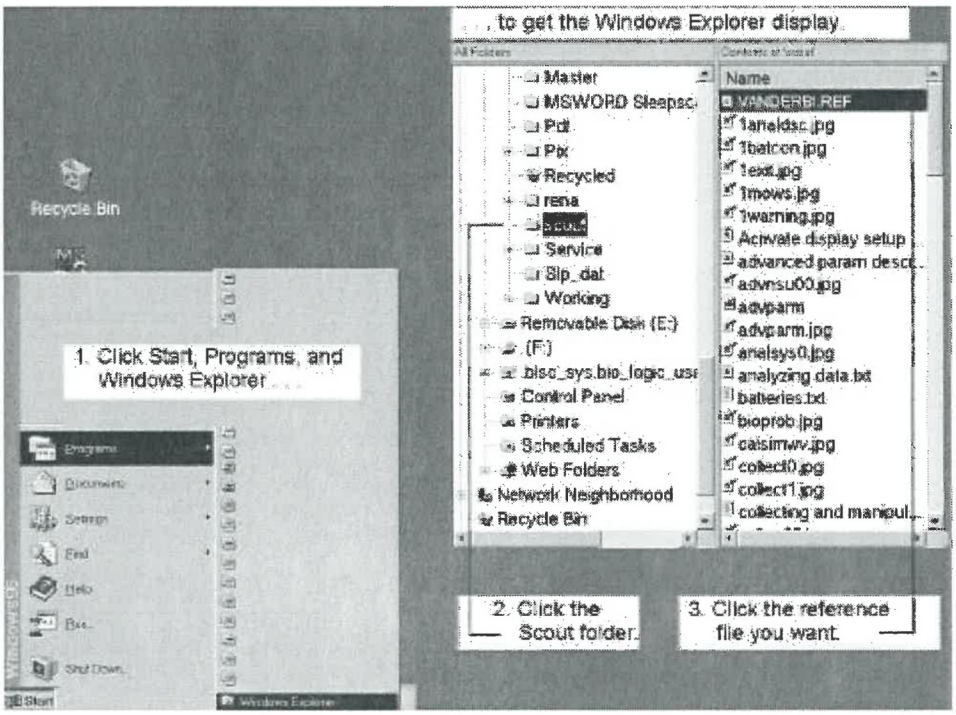
4. Click the RIGHT mouse button on the data set you want to use.

   This activates a pop-up menu of program options.

5. Select (click on) Open or Open With… from the pop-up menu.

   This displays the data set you selected in the program editor you want to use. Use the Notepad program to edit the file as a plain text file. Save the file as plain text no matter what editor you use. Save as type *.ref file.

Copyright © 2003-2004
Bio-Logic Systems Corp



6. Use the tables to change the frequency, the mean DP amplitude, and the standard deviation to the values you want.

ASCII formats for Reference data files

Reference Data Format

REFVER=1.0	For Bio-logic use only.
;Name = Vanderbilt U. 65/55, 2 St. Dev.	Substitute the new text name here. Note that the name inside the file is the reference data set name that appears in Scout. This name must be changed too.
;Type = DP-Gram	For Bio-logic use only.
;Ratio = 1.22	Substitute the new F2/F1 ratio here.
;L1 range =62.0 68.0	Substitute an acceptable L1 range here.
;L2 range = 52.0 58.0	Substitute an acceptable L2 range here.
;DP deviation = 2.0	Substitute the desired DP number of standard deviations here.
;NF deviation = 0.0	Substitute the desired NF number of standard deviations here.

Copyright © 2003-2004
Bio-Logic Systems Corp

Frequency and values from the new reference set

Table of Standard Deviation Values

Freq	DP	Sigma (DP)	NF	Sigma (NF)
634.0	9.25	5.97	5.63	6.68
805.0	9.01	6.39	-7.43	8.65
1001.0	10.18	6.56	-11.28	7.72
1586.0	10.65	6.63	-16.45	7.56
2002.0	6.85	6.40	-19.41	6.07
3174.0	6.10	5.18	-21.16	6.04
4003.0	6.10	5.68	-24.65	7.08
6347.0	1.22	8.51	-25.24	6.38

7. Make sure you have deleted all original values from the new file.
8. Save the file you have created to a new filename (maximum 39 characters)../
9. Save the new reference data set file in the PROGRAM FILES/SCOUT directory.

   Use the new filename and .REF extension.
10. Open the Scout program.

    The new reference data set file appears in the Reference Data Menu.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

TROUBLESHOOTING

Calibration Problems

Use the information in this topic to solve common problems occurring during the Calibration phase of a DPOAE test.

To reduce excessive noise during a calibration:

1. Attach the probe cord on the patient's clothing as close to the ear as possible.

   Secure the cord to stabilize the probe and reduce excess noise during calibration.

2. Keep the patient as still as possible during calibration.

3. Run the calibration and test in a quiet room.

To achieve an acceptable calibration result:

1. Make sure that the probe tip is clean, correctly installed on the probe end, and the proper size.

2. Make sure that the probe tip is correctly inserted in the patient's ear canal.

   If necessary, gently compress the probe tip to conform to the patient's ear canal.

3. Check for and clear any debris in the nozzle of the probe.

Data Collection Problems

To successfully collect quality OAE data, users must have a proper hardware setup, correct software installation, adequate power to the Scout Sport hardware, correct probe tip installation, correct insertion in the patient's ear, reasonable protocol setup parameters, and an appropriate test environment. This document addresses each of these. Turn to the appropriate section for information and illustrated, step-by-step procedures.

How to correct a Communication Fault message

If the system displays a Communication Fault message instead of starting a collection:

1. Make sure that the communication cable is securely attached to the correct connectors on the Scout Sport and system computer .

2. Make sure that the system is using the correct communication port.

   Check the software installation process.

Copyright © 2003-2004
Bio-Logic Systems Corp

3. Make sure that the COM port that the Scout program is using is not disabled or reserved for another peripheral device, such as a modem, docking device, or PCMCIA driver.

4. Disable any "power management" programs; disable any screen savers.

5. Check the Windows startup file. See the Microsoft Corporation's documentation for instructions.

6. Make sure that the rechargeable battery has adequate power to perform a test.

How to correct unacceptable calibration

If the system cannot achieve an acceptable calibration:

1. Make sure that the probe is securely connected to the Scout Sport box.

2. Make sure that the appropriate ear tip is correctly installed on the probe.

   —When using a Bio-logic probe, verify the probe is correctly assembled.

   — Make sure that the probe is not occluded with debris.

3. Make sure that the probe is correctly positioned in the patient's ear.

   To function correctly, a probe must fit securely into the patient's ear without hitting the canal wall at an angle.

How to cope with excessive noise

If the system collects data, but excessive noise makes interpretation difficult:

1. Make sure that the ear tip is correctly installed on the probe.

2. Make sure that the probe is correctly inserted in the patient's ear.

3. Make sure that the patient remains still.

4. Make sure that the test environment is not too noisy.

   Move to a quieter environment if necessary.

5. Check the protocol setup parameters.

   Use parameters that are optimized for high noise environments.

Copyright © 2003-2004
Bio-Logic Systems Corp

Troubleshooting the Probe (580-DPOAESM1, 580-DPOAESM2, 580-DPOAESM)

Troubleshoot probes whenever you get excessive artifact during testing, get refer results for all patients, or get any of the following error messages: "Calibration data suggests probe fit problem. Check probe fit." Or "Warning! Target stimulus level cannot be reached! "

Checking the probe cable connection

1. Disconnect the probe cable from the Scout Sport box.
2. Inspect the round metal connector on the probe cable.

   —There should be 1 black plastic center piece surrounded by seven metal pins of approximately equivalent length. The black plastic piece should be approximately as long as the pins.

   —Inspect all of them, checking for broken or bent pins.

   —If you find a bent pin, gently push the pin back into place.

   —If the pin(s) and or black connector are damaged, make contact with Bio-logic for repair or replacement.

   —If the round connector on the Scout Sport box is damaged, make contact with Bio-logic for repair or replacement.

To reconnect the probe to the Scout Sport box:

1. Line up the probe cable connector (checking the pin alignment) properly with the round connector on the Scout Sport box.
2. Firmly reconnect the probe to the Scout Sport box.
3. Connect the Scout Sport box to a working wall outlet, using power supply, part # 520-PS12D3.

Note: Diminished battery output can cause probe errors.

4. Perform a test by following the steps in the Performing a test using the plastic cavity section of this document.

Note: If the probe cable connection is good and the error messages "Calibration data suggests probe fit problem. Check probe fit." Or "Warning! Target stimulus level cannot be reached!" are still present, or the initial problem was excessive artifact during testing or refer results for all patients, proceed to the Checking the probe body and flexible tubing section of this document.

Copyright © 2003-2004
Bio-Logic Systems Corp

Checking the probe body and flexible tubing

1. Inspect the probe body.

   All three metal sound delivery tubes should be straight and have no significant gaps between them. If you find a problem with the probe body:

2. Make contact with Bio-logic to replace part #580-DPOAEPB1.

3. Make sure the clear flexible tubing is connected well to speaker A and B on the speaker mo dule and the two metal sound delivery tubes of the probe body.

4. Inspect the clear flexible tubing for debris or holes.
   If debris and/or holes are present:

5. Make contact with Bio-logic to replace the tubing (part # 203905).

Note: Do not cut the tubing. This could interfere with proper sound transmission.

6. Perform a test by following the steps in the Performing a test using the plastic cavity section of this document.

Note: If the probe cable connection is good and the error messages "Calibration data suggests probe fit problem. Check probe fit." Or "Warning! Target stimulus level cannot be reached!" are still present, or the initial problem was excessive artifact during testing or refer results for all patients, proceed to the Cleaning the probe section of this document.

Copyright © 2003-2004
Bio-Logic Systems Corp

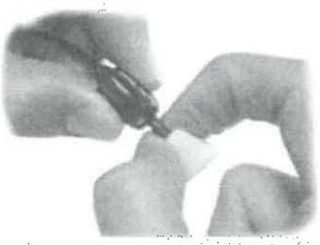
Cleaning the probe

CAUTION

Avoid pulling the foam ends of the foam ear tips when you want to remove them. Pulling the foam ends causes a vacuum in the clear tubing and makes removal more difficult. Too great force can tear the foam tips from the tubing. Always follow the step below to remove the foam ear tips from the probe.

Improper cleaning can damage the microphone.

If you use alcohol or an alcohol-treated pad to clean the nozzle, avoid letting alcohol drip down the grooves into the closed channels at the nozzle's base.



To remove foam tips, hold the probe body with your fingers on top of the nozzle clips. Then, with the other hand, place your fingernails behind the clear tube at the base of the nozzle and slide the tube toward the end.

Do not pull on the foam. This will cause suction of the tube around grooves in the nozzle and will actually impede the removal.

You may end up pulling the foam off of the clear tube while the tube remains on the nozzle.

Follow these steps:

1. Remove the disposable ear tip from the probe nozzle as follows:

   For the foam ear tips:
   —Use your fingertips on the clear tubing to slide the tip off the nozzle (see CAUTION).

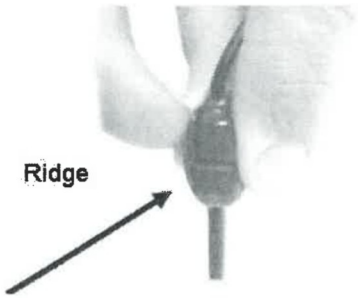
   For the TreeTips:
   —Place your fingertips at the base of the TreeTip and slide it off the nozzle.

2. Use tissue, a gauze pad, and the Bio-logic probe cleaners (part # 203001) to remove debris from the nozzle's three (3) grooves.

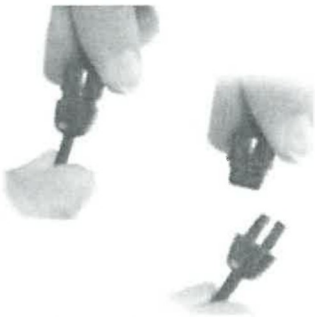
Note: Be sure to clean the grooves from base to tip to avoid pushing debris into the closed channel at the base of the grooves.

Copyright © 2003-2004
Bio-Logic Systems Corp

Locate the smooth, flat clip. Use your fingernail to lift up on the end of the clip to "unlock" it.



Locate the clip with the ridge and use your fingernail to lift up and "unlock" it.



After both clips are unlocked, gently pull nozzle off of the probe body.

Note: These next steps are optional.

3. Disconnect the nozzle assembly from the probe body as follows:

   —Find the smooth, flat clip and lift it with your fingernail.

   —Find the clip with the ridge and lift it with your fingernail.

   —Pull nozzle off the probe body gently.

4. Thread the Bio-logic cleaning tool (part #203001) through all three grooves on the probe body until the grooves are clear of debris.

Note: Be sure to clean the grooves from base to tip to avoid pushing debris into the closed channel at the base of the grooves. A small, nylon filament may be visible at the base of two of the grooves. These are part of the probe deign. Do not mistake them for debris and try to remove them

Copyright © 2003-2004
Bio-Logic Systems Corp

To install a new nozzle onto the probe body, align the clips on the probe nozzle with the corresponding slots in the probe body. Be sure that the probe nozzle component is oriented so that the shape of the cavity matches the shape of the probe body.

Once the two pieces are aligned to match, slide the nozzle clips down the slots until they lock into the small indentations at the back of the probe body.

Make sure that the nozzle component is securely attached to the probe body.

5. Reassemble the probe as follows:

   —Align the clips on the probe nozzle with the corresponding slots in the probe body.

   —Orient the probe nozzle so that the shape of the cavity matches the shape of the probe body.

   —Slide the nozzle clips down the slots until they lock into the small indentations at the back of the probe body.

   —Make sure that the nozzle attaches securely to the probe body.

6. Perform a test by following the steps in the Performing a test using the plastic cavity section of this document.

Note: If the error messages "Calibration data suggests probe fit problem. Check probe fit." Or "Warning! Target stimulus level cannot be reached!" are still present, or the initial problem was excessive artifact during testing or refer results for all patients, proceed to the Checking the speaker module section of this document.

Copyright © 2003-2004
Bio-Logic Systems Corp

Checking the speaker module

1. Disconnect clear flexible tubing from metal tube labeled A on the speaker module.
2. Hold the metal sound delivery tube A close to your ear.
3. Perform a test.
4. Listen for a sound.

   If no sound is audible:

   —Make contact with Bio-logic to replace the repair or replace the probe cable, part # 580-DPOAESM1, 580-DPOAESM2, or 580-DPOAESM3.

   If a sound is audible:

5. Reconnect the clear flexible tubing to the metal sound delivery tube A.
6. Disconnect clear flexible tubing from the metal sound delivery tube labeled B on the speaker module.
7. Hold the metal sound delivery tube B close to your ear.
8. Perform a test.
9. Listen for a sound.

   If no sound is audible:

   —Make contact with Bio-logic to replace the repair or replace the probe cable, part # 580-DPOAESM1, 580-DPOAESM2, or 580-DPOAESM3.

   If a sound is audible:

10. Reconnect the clear flexible tubing to the metal sound delivery tube B.

Note: If the error messages "Calibration data suggests probe fit problem. Check probe fit." Or "Warning! Target stimulus level cannot be reached!" are still present, or the initial problem was excessive artifact during testing or refer results for all patients, proceed to the Checking the microphone section of this document.

Copyright © 2003-2004
Bio-Logic Systems Corp

Checking the microphone

1. Repeat the steps in the "Cleaning the Probe" section of this document.

   Repeat these steps because even a small amount of debris lodged in one of the metal sound conducting tubes can cause a failure on this test.

2. Perform a test by following the steps in the Performing a test using the plastic cavity section of this document.

Note: If the error message "Calibration data suggests probe fit problem. Check probe fit." or "Warning! Target stimulus level cannot be reached!" appear on the screen, refit the probe into the plastic cavity and repeat the test. If either error message appears again, make contact with Bio-logic to replace the microphone, part #580-DPOAE MP3, 580-DPOAE MP4, 580-DPOAE MP4-1.If the initial problem was due to excessive artifact and/or all patients give refer results, proceed to the Performing a biologic check section of this document.

Performing a biologic check

1. Select a subject with known good hearing who has previously gotten a pass result on the Scout DPOAE.
2. Place an appropriate adult size ear tip in the subject's ear.
3. Perform a test.

If after completing step 1 through 5, you are still getting excessive artifact during testing and/or all patients give refer results, make contact with Bio-logic to replace the microphone, part #580-DPOAEMP3, 580-DPOAEMP4, 580-DPOAEMP4-1.

Performing a test using the plastic test cavity

1. Place a probe tip on the end of the probe.
2. Insert probe snugly into the plastic test cavity, part #203000.
3. Select a screening DP or TE test.
4. Perform a test.
5. Observe the screen in the Scout program.
   The Scout program performs a check fit and calibration. The overall result should be a REFER. However, it would not be unusual to get a pass result at one of the individual frequencies. A REFER result would be consistent with a probe in good working condition.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

DESCRIPTIONS

Product description

The Scout Sport is a diagnostic computer system that tests and analyzes otoacoustic emissions (DPOAE) of the ear. Using a sophisticated combination of hardware and software, the Scout program produces controlled signals in the ear canal. It then measures emissions from the inner ear in response to the stimuli. The Scout program collects the data, then averages and plots the results as a graph. At the end of this process, users can analyze the data and print the results.

Although the Scout Sport can quickly and efficiently test any age group, it is especially suited to screen newborns for hearing problems. The Scout Sport is available as a kit, computer system, or as a part of Bio-logic's Evoked Potential System.

Technical description

Upon request, Bio-logic Systems Corp will supply circuit diagrams and other information that will assist qualified technical personnel to repair those parts that Bio-logic Systems Corp designates as repairable. Currently, Bio-logic Systems Corp designates no such repairable parts for the Scout Sport system.

Environmental specifications

Temperature:	Operating: 15 to 30 degrees C (59 to 86 degrees F)
	Storage or transportation: -20 to 70 degrees C (-68 to 158 degrees F)
Humidity:	Operating: 15% to 95% at 40 degrees C (104 degrees F) non-condensing
	Storage or transportation: 90% at 65 degrees C (149 degrees F)
Condensation:	Recovery time after condensation to operational specification: 24 hours
Flammability:	UL94V-O
EMC specifications:	Radiated Emissions: CISPR 11EN55011: 1991 Group 1 Class B
	Conducted Emissions: CISPR 11EN55011: 1991 Group 1 Class B
	Electrostatic Discharge Immunity: IEC 801-2: 1991
	Radiated RF Immunity: IEC 801-3: 1991
	Fast Transient/Burst Immunity: IEC 801-4: 1988
	Surge Immunity: IEC 801-5

Copyright © 2003-2004
Bio-Logic Systems Corp

Scout Sport options

Bio-logic offers different types of options to meet specific customer needs. This topic describes standard options available for the Scout Sport or AuDX PLUS systems. For a complete list of available options, please make contact with Bio-logic Customer Support at 1-800-323-8326.

Printer

The printer option lets you print patient data as a customized report. These reports include demographic information, numeric data in tabular form, and graphic data. The Scout Sport program supports any Windows compatible computer.

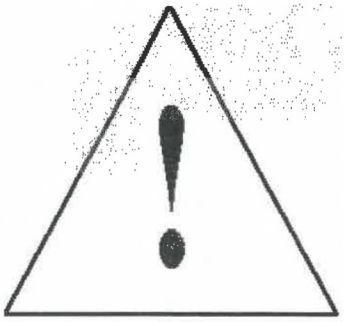
Probe Ear Tips for the Bio-logic DPOAE Probe

These disposable ear tips work with the Bio-logic DPOAE probe. Users can order packages of either 20 or 100 disposable ear tips in Jumbo, Pediatric, Adult, 6.0 mm, and the infant TreeTip design. See the tables in the Disposable Probe Ear Tips section of this manual for part numbers.

Copyright © 2003-2004
Bio-Logic Systems Corp

Computer requirements for kit installations

Because computer systems have a wide range of performance characteristics, the host computer must meet the minimum requirements that appear after the WARNING to ensure the Scout program performs as intended.



WARNING

This equipment has been designed to meet all applicable medical equipment standards for patient isolation and electrical safety. However, Bio-logic Systems Corp assumes no responsibility for the equipment into which kits are installed, or for errors and omissions in the installation process. It is the responsibility of the installer to insure the finished system meets appropriate equipment standards, such as, IEC 601, BS 5724, UL2601, etc.

Specifications

Computer System	—Pentium® or Celeron® IBM compatible computer (166 MHz or better)
	—A minimum of 128 MB dynamic RAM memory
	—150Mb Hard Disk
	—Available serial port
Operating System	—Windows 98, 2000, XP
Disk Drives	—Rewritable CD-ROM Drive
	—At least one mass storage device (hard drive) with a minimum of 200 MB free space.
UL Compliance	An isolation transformer if computer chassis leakage exceeds 100 microamps.
Printing Devices	Any Windows 98, 2000, XP compatible printer.
Other Hardware	Scout Sport, AuDX PLUS, or Navigator Pro™ EP unit and accessories.
Standards	IEC 60950 Information Technology Equipment

Copyright © 2003-2004
Bio-Logic Systems Corp

Disposable Probe Ear Tips

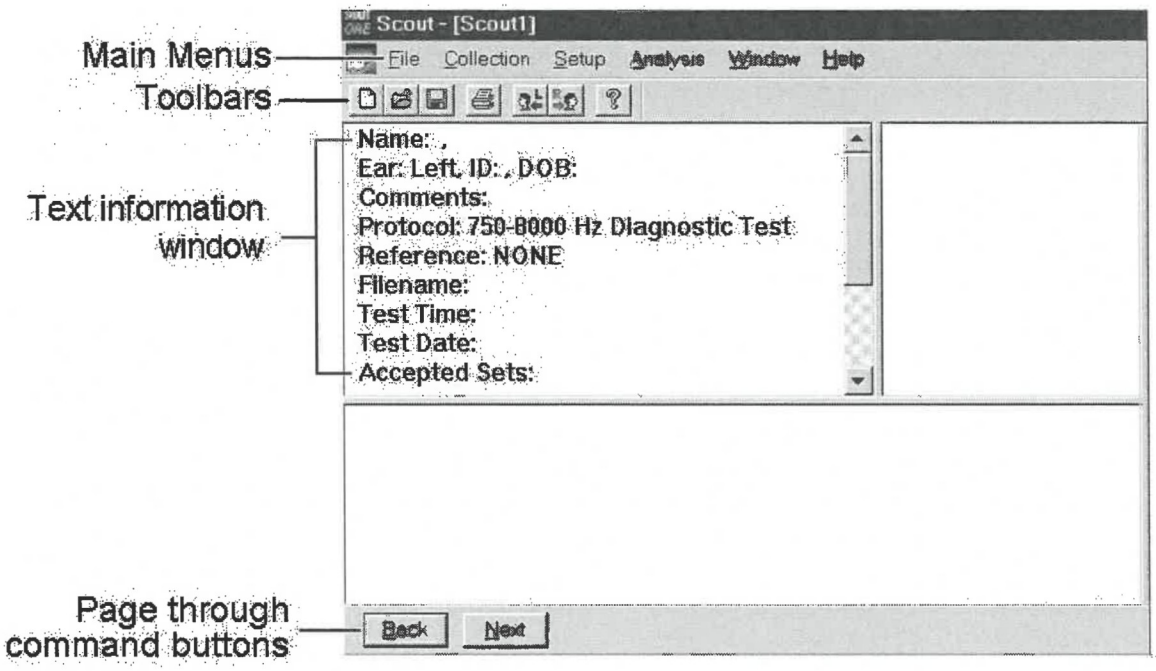
Disposable ear tips are not included in the Scout kit to allow users a free choice in tip sizes. Use the parts list to verify the ear tips (ordered with the kit) are the correct size and type.

Service Part Number	Description of Bio-logic OAE Probe Ear Tips
203200	Jumbo foam Tips, 20 per pkg
203201	Pediatric foam Tips, 20 per pkg
203202	Adult foam Tips, 20 per pkg
203333	6.0mm Tips, 20 per pkg
203208	TreeTips, 20 per pkg
203209	Preemie TreeTips, 20 per pkg
203210	Jumbo foam Tips, 100 per pkg
203211	Pediatric foam Tips, 100 per pkg
203212	Adult foam Tips, 100 per pkg
203353	6.0mm Tips, 100 per pkg
203218	TreeTips, 100 per pkg
203219	Preemie TreeTips, 100 per pkg

Copyright © 2003-2004
Bio-Logic Systems Corp

DESCRIPTIONS: MENUS AND DISPLAYS

The Scout start screen: DPOAE tests

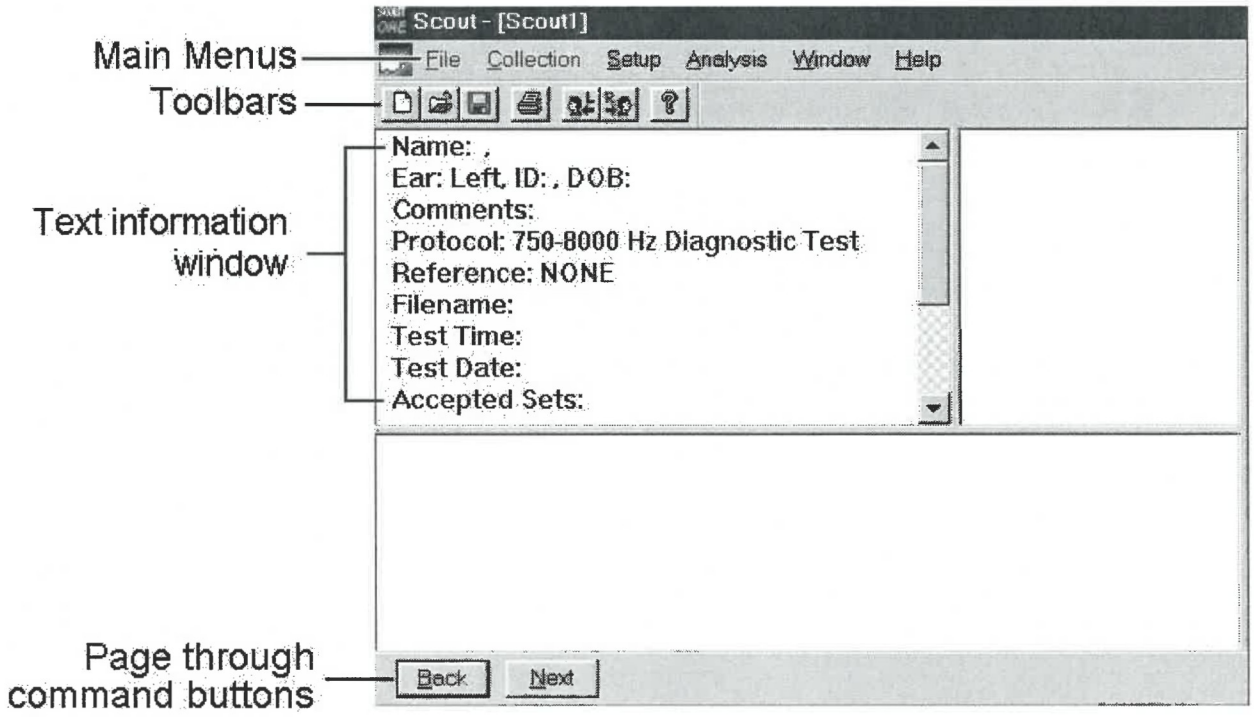


The Scout start screen is the first screen that appears after you start the Scout program. It consists of a main menu, a toolbar, an information window, and several different windows and displays. The illustration shows a typical Scout start screen. The table lists and describes components.

Scout start screen: DPOAE tests

Component	Description
Main Menu	This menu stretches across the top, left side of the program screen. Selecting a topic from this menu activates a drop-down menu of related options and commands. For more information, an illustration, or both, turn to "The Main Menus: illustrated descriptions."
Toolbar	This is a set of icons that appears by default below the main Menus. You can move this toolbar anywhere on the Scout screen or hide it completely. Each icon relates to a different program function. For more information, an illustration, or both, turn to "The Toolbar and its icons."

Copyright © 2003-2004
Bio-Logic Systems Corp



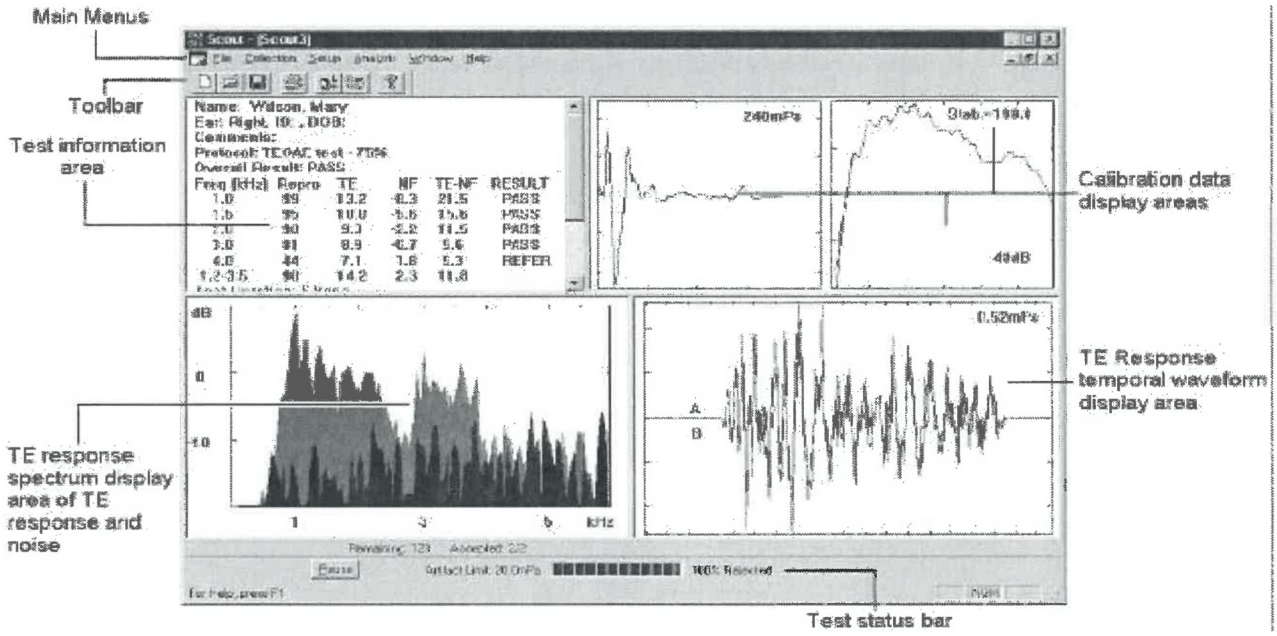
Component	Description
The Information Window	This window area appears on the upper, left side of the program screen. It contains a text display of patient information, numeric data for the last completed frequency condition during a DP test, or numeric data for the solid data point during Analysis. For more information, an illustration, or both, turn to "The Text Information window."
The Calibration Stimulus Waveform Window	This window appears in the upper, right side of the program screen. It shows you a graphic display of the temporal waveform that the program creates in the main display window during the Calibration phase of DPOAE testing. For more information, an illustration, or both, turn to "Display Screen Layouts."
The Distortion Product (DP) Graphic Display	This graphic display appears in the main display window of the Scout program screen. It plots the otoacoustic emissions that occur in the patient's ear canal in response to each stimulus condition. For more information, an illustration, or both, turn to The Distortion Product (DP) Graphic Display.
The F1 Intensity (L1) Graphic Display	This graphic display normally appears near the top of the main display window. It shows the measured intensity level of the lower frequency stimulus (F1). For more information, an illustration, or both, turn to The F1 Intensity (L1) Graphic Display.
The F2 Intensity (L2) Graphic Display	This graphic display normally appears near the top of the main display window. It shows the measured intensity level of the higher frequency stimulus (F2). For more information, an illustration, or both, turn to The F2 Intensity (L2) Graphic Display.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
The Main Graphics Display window.	This window area appears on the lower, left side of the program screen and usually occupies the largest portion of the screen. It displays either the temporal waveform(s) during the calibration test phase or the DP-Gram during the DPOAE test phase. For more information, an illustration, or both, turn to The Main Graphics Display window.
The Noise Floor Graphics display.	This graphic display appears in the main display window. It shows the measured noise floor amplitude (dB) of each measured stimulus condition during the DPOAE test phase. Green triangles represent plotted Noise Floor measurements in the graphic display. The program automatically connects the plotted measurements with a green line. For more information, an illustration, or both, turn to The Noise Floor Graphics display.
The Plot Symbol Key	This key appears near the bottom, left side of the program screen. It shows the symbols used in the DP-Gram for the F1 Intensity (L1), the F2 Intensity (L2), the Distortion Product (DP) and the Noise Floor (NF). For more information, an illustration, or both, turn to The Plot Symbol key.
The Response Spectrum Display area	This display area appears on the right side of the program screen. It shows spectral information during the calibration test phase or response spectrum raw data during the DPOAE test phase or during analysis when you select a datapoint on the DPgram. For more information, an illustration, or both, turn to The Response Spectrum Display area.
The Status Information area	This display area appears at the bottom of the program screen during the DPOAE test phase and tracks the progress of a DPOAE test during the measurement phase. For more information, an illustration, or both, turn to The Status Information area.
The Stimulus Spectrum Display Area	This display area appears in the upper, left section of the program screen to the right of the calibration stimulus waveform. It displays the spectra of the ear canal's response to a broad frequency stimulus that is emitted by each loudspeaker during the calibration phase. For more information, an illustration, or both, turn to The Stimulus Spectrum Display Area.
The DP Amplitude Reference Set	This graphic display appears in the DP-Gram and shows the DP amplitude range associated with the user specified data reference set. . For more information, an illustration, or both, turn to The DP Amplitude Reference Set.
The NF Amplitude Reference set	This graphic display appears in the DP-Gram and shows the NF amplitude range associated with the user specified data reference set. For more information, an illustration, or both, turn to The NF Amplitude Reference set.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Scout start screen: TEOAE tests


Main Menus
Toolbar
Test information area
Calibration data display areas
TE Response temporal waveform display area
TE response spectrum display area of TE response and noise
Test status bar

When you start a TEOAE data collection, the program performs an in-the-ear calibration first. This process insures that the stimulus intensity that goes to the ear meets the target amplitude value in the test protocol. This process is identical to calibration during a DPOAE test. Refer to the *Scout Sport System User's and Service Manual* (Part number 590-OAUM03) for additional information about the in-the-ear calibration phase of the test.

After the calibration phase, the TEOAE measurement phase begins. The TE-gram screen is similar to the DP-gram screen. The illustration shows a typical TE-gram display. Components for the display include:

Component	Description
Main Menu and Toolbar	The main menu and toolbar items on the TE data collection screen are identical to those seen on the DP data collection screen. Refer to specific sections of this document for more information about the function of the main menu items and toolbar icons.
Test Information Text Area	The test information text area displays the patient information that you entered when you initiated the test. During the TE measurement phase it periodically updates a table of measured values for each of six frequency bands. The first five frequency bands are one-half octave bands centered at the displayed frequencies (1000, 1500, 2000, 3000 and 4000 Hz). The last frequency band is a broader band including frequencies from 1.2 to 3.5 kHz). The measured values for these bands include the TE amplitude, the NF amplitude, the difference value between the TE amplitude, and the noise floor (NF). An Overall Result pass or refer indication as well as a per frequency pass or refer recommendation may appear in the result column of the table. These indications depend on the Pass/Refer Criteria that you defined as part of the test protocol. The test information text area also displays the name of the test protocol that you used to collect the data and the duration of the test.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
Calibration Display Area	The calibration display area shows the data achieved during the calibration phase of the TE test. Both the temporal waveform and the spectrum of the calibration appear. During the TE test, a value that shows the stability of the stimulus spectrum in the ear canal updates regularly in the upper right corner of the calibration spectrum area. The program regularly superimposes the pre-test calibration waveform and spectrum with a current stimulus waveform and spectrum on the display so that the user can monitor for changes. The stability value reflects these changes. For example, a stability value of 100% means that the stimulus spectrum that occurred during the current average is identical to the stimulus spectrum that occurred during the pre-test calibration phase.
TE Response Spectrum Display Area	The TE response spectrum shows a frequency vs. amplitude graph of the TE response. The TE response displays in red when you perform a right ear test and blue when you perform a left ear test. The noise floor appears superimposed on the TE response. Noise amplitude appears in dark green.
TE Response Temporal Waveform Display Area	The TE response temporal waveform displays two superimposed waveforms that represent two alternately collected response buffers. The tick marks at the bottom of the display each represent one millisecond of duration. How well these two response buffers match in a particular frequency band determines the reproducibility response parameter.
Test Status Bar	The test status bar shows the artifact rejection threshold value. During the test, an artifact rejection bar shows you the amount of artifact by filling in with blue blocks of color. The percent of artifact occurring during an average also displays as a percent value. To change the artifact rejection threshold value during the test, use the up and down arrow keys or the page up and page down keys on the keyboard. You can use the End key as a quick way to achieve averaging when unrelenting artifacts are occurring. However, using the End key allows high amplitude noise into the TE response and compromises the quality of the data.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Main Menus: illustrated descriptions

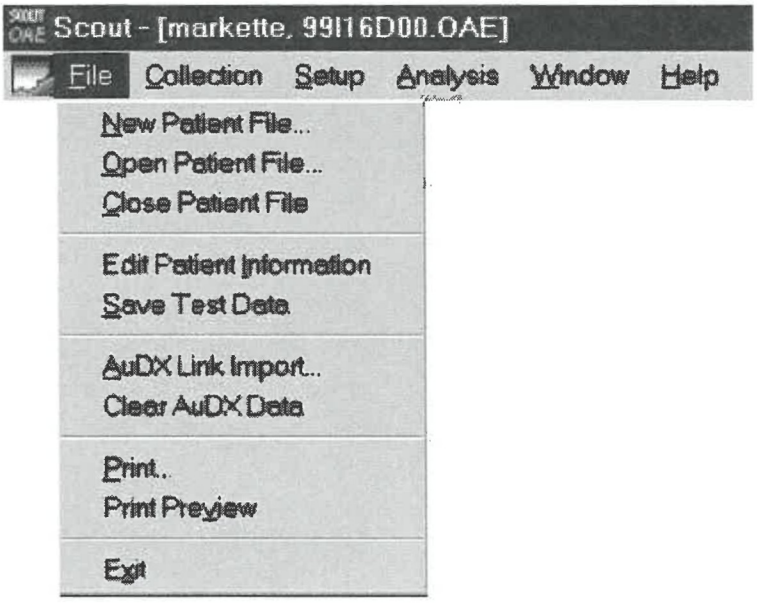
The "Main Menus" appear at the top of the program's main screen. Selecting any of these menus (with the mouse or the keyboard) displays a drop-down list of menu items that you can use to operate the program. The illustration shows the Main Menus. The table lists and describes each menu.

The Main Menus

Menu	Description
File menu	The File menu contains standard file operating items that work in a specific manner with this program (such as New, Open, Close, Save, Print Preview, Print; see the Microsoft® Corporation's Windows Operating System documentation on the Windows CD). The Edit Patient Information item also appears in the File menu. For more information about the File menu, turn to The File menu.
Collection menu	The Collection menu lets you initiate data collection or reset the Scout system's hardware. For more information about the Collection menu, turn to The Collection menu.
Setup menu	The Setup menu displays items that let you configure the Scout test that you want to run. For more information, turn to The Setup menu.
Analysis menu	This menu item lets you change the display parameters of the current window quickly. For more information, turn to The Analysis menu.
Window menu	The Window menu contains standard Windows commands (see the Microsoft Corporation's Windows Operating System documentation). For more information about the Window menu, turn to The Window menu.
Help menu	The Help menu contains two menu items: —The **Help Topics** item: Select this item to open an on-line Help program. —The **About Scout** item: Select this item to display information about the version of the Scout program that is currently on your computer. For more information about the Help menu, turn to The Help menu.

Copyright © 2003-2004
Bio-Logic Systems Corp

The File menu

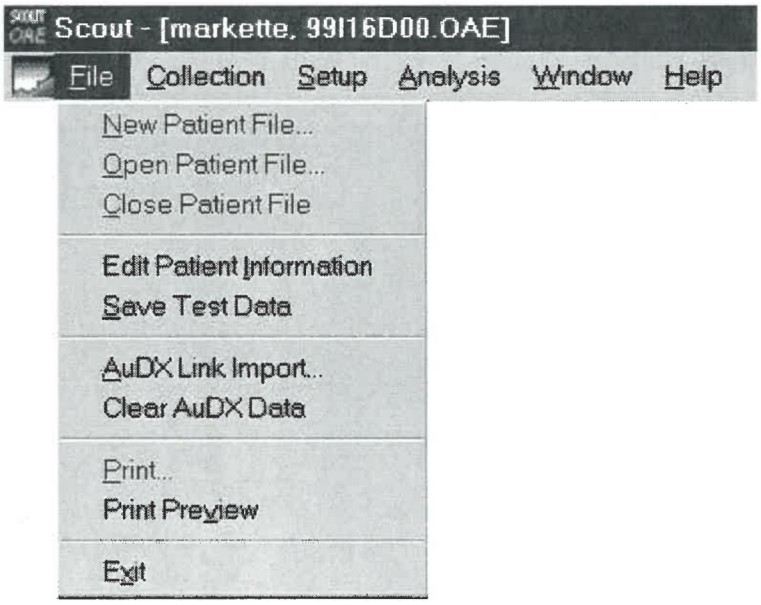


The File menu is the first of the Main Menus. When you select it, a drop-down list of items and commands appears. The illustration shows a typical Scout File menu and its drop-down list. The table lists and describes each item.

The File Menu

Menu item or command	Description
New Patient File	Select (click on) this item to create a new patient record with the Scout system. For more information, turn to The New Patient File item.
Open Patient File	Select (click on) this item to launch an Open Patient Data File display. You can then use that display to open an exiting patient record with the Scout system. For more information, turn to The Open Patient File item.
Close Patient File	Select (click on) this item to close the Scout window you are viewing. If more than one window is open, the program keeps those other windows active. For more information about the Close command, see the Microsoft Corporation's Windows Operating System documentation.
Edit Patient Information	Select (click on) this item to launch a Patient Information display for the patient whose file you are viewing. You can then use that screen to edit that patient information. For more information, turn to The Edit Patient Information item.
Save Test Data	Select (click on) this item to save the data that the Scout gathers after testing a patient. For more information about the Save command, see the Microsoft Corporation's Windows Operating System documentation.

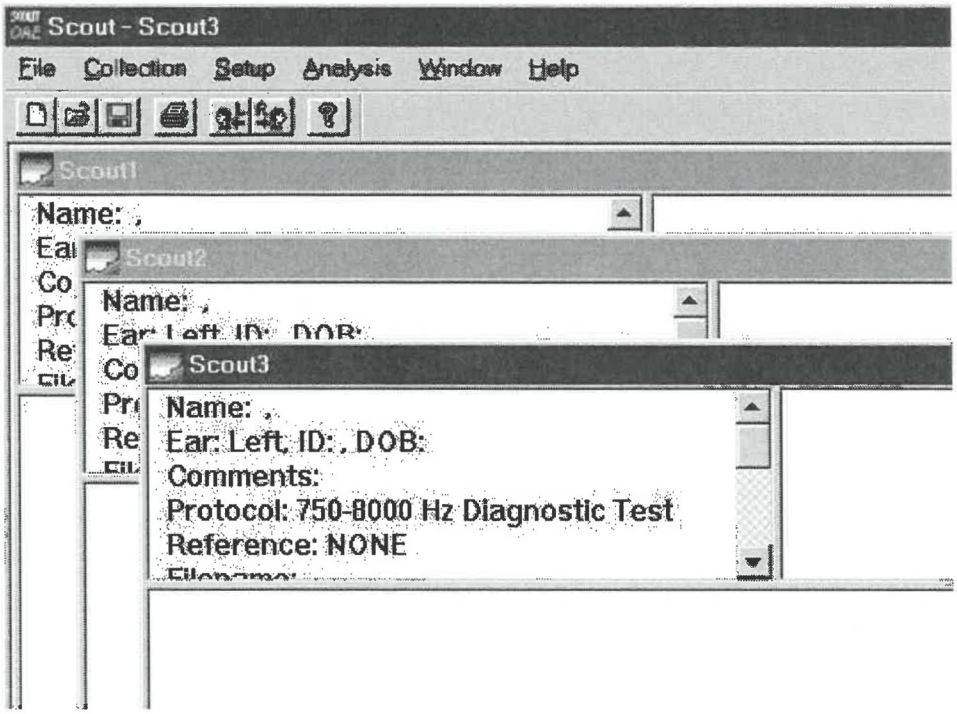
Copyright © 2003-2004
Bio-Logic Systems Corp



Menu item or command	Description
AuDX link import	Select (click on) this item to launch an AuDX link dialog box. This dialog box lets you import tests gathered with the AuDX testing device. For more information about this dialog box, see "The AuDX link import item."
Clear AuDX data	Select (click on) this item to erase all ofthe stored data in the AuDX testing device.
Print	The Print command is a standard Windows command. When you select it, the program displays a "Print" dialog box. For more information about the Print command and the "Print" dialog box, see the Microsoft Corporation's Windows Operating System documentation.
Print Preview	When you select the Print Preview command, the program displays the patient data or report as it appears when printed. For more information about the Print Preview command, turn to "How to preview a patient file you want to print."
Exit	The Exit command is a standard Windows command. Click it to close all open Scout windows and to leave the Scout program. If you have made changes to any of the windows, the program asks you if you want to save your changes and leads you through a "save" routine. For more information about the Exit command, see the Microsoft Corporation's Windows Operating System documentation

Copyright © 2003-2004
Bio-Logic Systems Corp

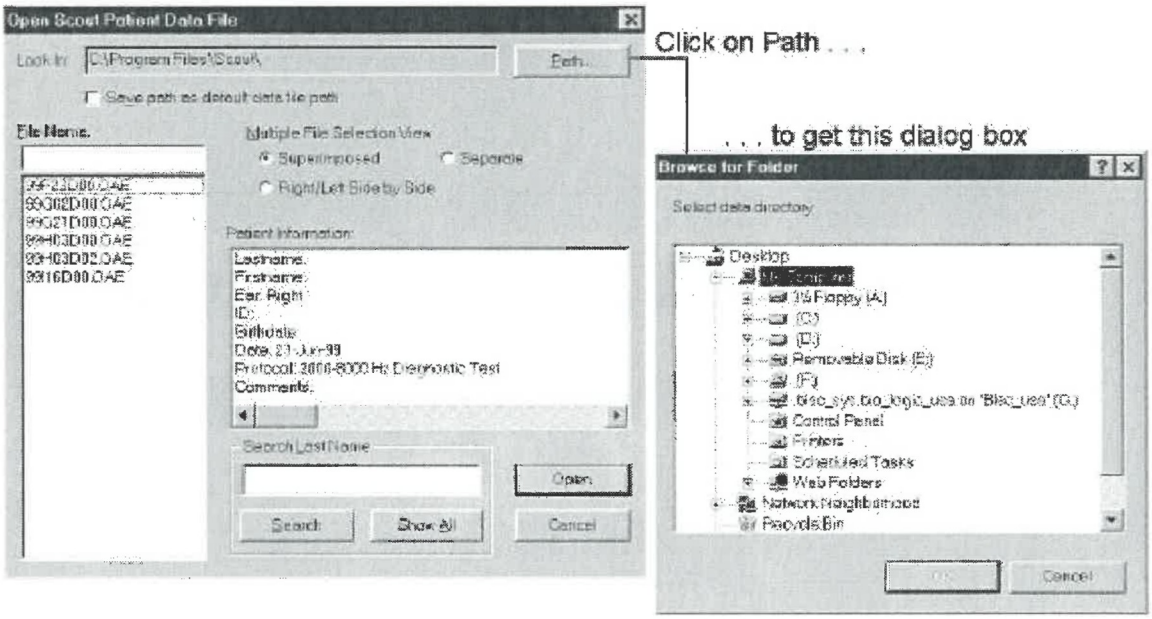
The New Patient file item



Use the New Patient File item to start a new record for a patient. Simply select (click on) this item to create a new, "blank" patient file. The illustration shows an example of how to use the New Patient File item. For more information, turn to The Text Information Window or to How to load new patient information.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Open Patient File item



Select (click on) the Open Patient File item to launch an Open Scout Patient Data File display. This display lets you view and load any available data file on a specified drive, display the patient information saved with a specific file, or list all files for a specific patient.

The illustration shows the Open Scout Patient Data File display. The table lists and describes its components:

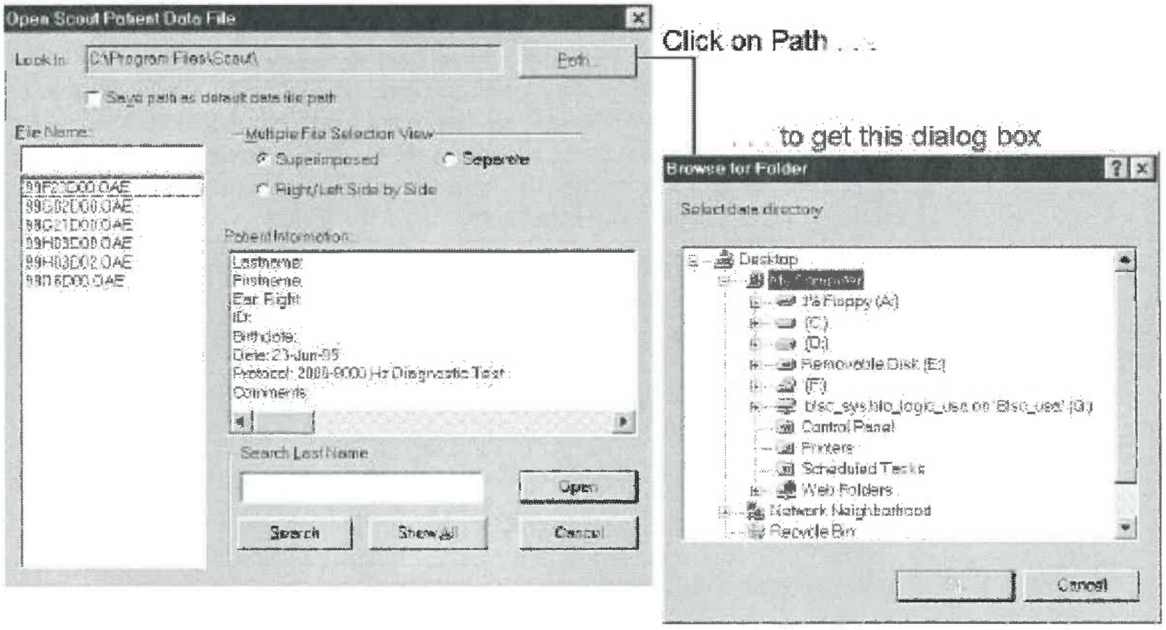
The Open Scout Patient Data File display

Component	Description
Look in: field	This field shows you where the Scout program is looking for the data files it shows in this display's **List of Files**. The format of this information is usually: **X:\YYY\ZZZ** where: **X:** = a letter that designates a disk drive on a computer system **YYY** = a series of numbers and letters that designate an optional "main folder" or "directory" on that disk drive **ZZZ** = a series of numbers and letters that designate an optional "subfolder" or "subdirectory" of that main directory. Users can add as many subdirectories as they wish by separating each with the \ symbol.
Path command button	Select (click on) this command button to launch a standard, Windows "Browse" display. For information about how to use the Windows browse feature, consult Microsoft Corporation's Windows documentation. This documentation usually appears on the CD-ROM that accompanied your computer system.

Copyright © 2003-2004
Bio-Logic Systems Corp

<table>
<tr><th>Component</th><th colspan="2">Description</th></tr>
<tr><td>Save path as default data file path checkbox</td><td colspan="2">Click on this box to "toggle" it between checked and unchecked. Check this box to have the Scout program use a data path that you designate as a default. This means that the Scout program automatically opens the drive and directory you designate every time you start it. Leave the box blank (unchecked) and the Scout program opens the drive and directory listed in the "Look in:" field.</td></tr>
<tr><td>File name field</td><td colspan="2">This field contains the name of the file that you are about to open with the Scout program. You can enter data in this field in several ways:
—You can select (click on) a file from the List of Files.
—You can use the Path command button and the Windows Browse feature to search for the data path you want.
—You can type a file name directly into the field.</td></tr>
<tr><td>List of files</td><td colspan="2">This field contains a list of the files that reside in the path (drive and directory or 'folder') where the Scout program is pointing. You can open any of these files by selecting (clicking on) them.
Note: You can use wildcards to select data from specific dates. Type the first few file digits followed by a star to narrow down the file list selections.</td></tr>
<tr><td rowspan="4">Multiple File Selection View radio buttons</td><td colspan="2">This group of options lets users display multiple files on the program screen in any of several ways depending on which radio button the user selects. Options include:</td></tr>
<tr><td>The Superimposed menu option</td><td>This option displays as many as six files in the same data window. Users can display the test information of any file by clicking on the patient name in the upper, right corner of the window and then clicking on a DP-Gram data point in the same color.</td></tr>
<tr><td>The Separate menu option</td><td>This option displays each file in an individual window with the standard window display. You can tile or cascade the windows for easier viewing.</td></tr>
<tr><td>The Right/Left Side by Side menu option</td><td>This option displays right and left ear tests in a single, split window. In this type of window format, the program automatically displays all right ear tests on the right side of the window and all left ear tests on the left side of the window. You can display as many as six files in the split window.</td></tr>
</table>

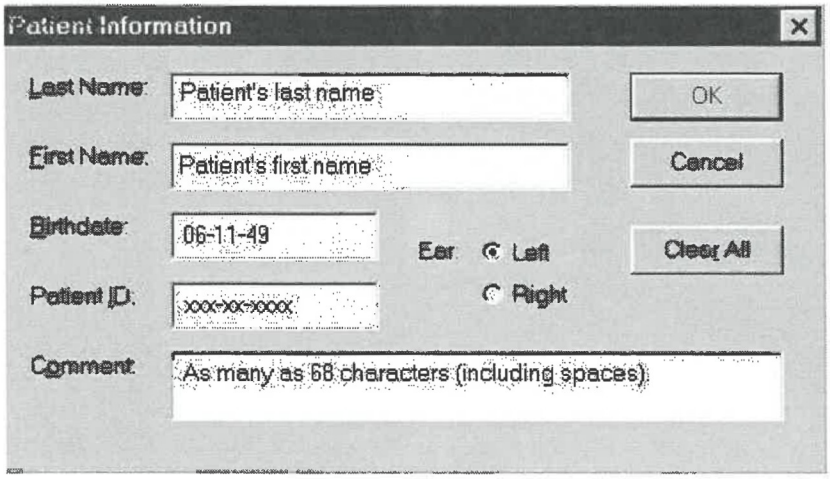
Copyright © 2003-2004
Bio-Logic Systems Corp



Component	Description	
Patient Information display area	This part of this display contains information about the patient whose file you select. This information can include clinical information (right and left ear data), birth date, patient information, and commentary.	
Search Last name controls	These controls let you search a drive or directory for a patient's file according to the patient's last name. This can be useful if file names are difficult to interpret.	
	Last name field	Type the patient's last name in this field. (**Note**: this field is not case sensitive.)
	Search command button	Users can view a list of all data files for a specific patient by entering the patient's last name in the Search Last Name field and then selecting the Search button.
	Show all command button	This button works after you use the Search command button. Select it to return to a complete list of available files.
Open command button	Click on this command button to open the data file you select.	
Cancel command button	Click on this command button to close the display without opening a data file.	

Copyright © 2003-2004
Bio-Logic Systems Corp

The Edit Patient Information item



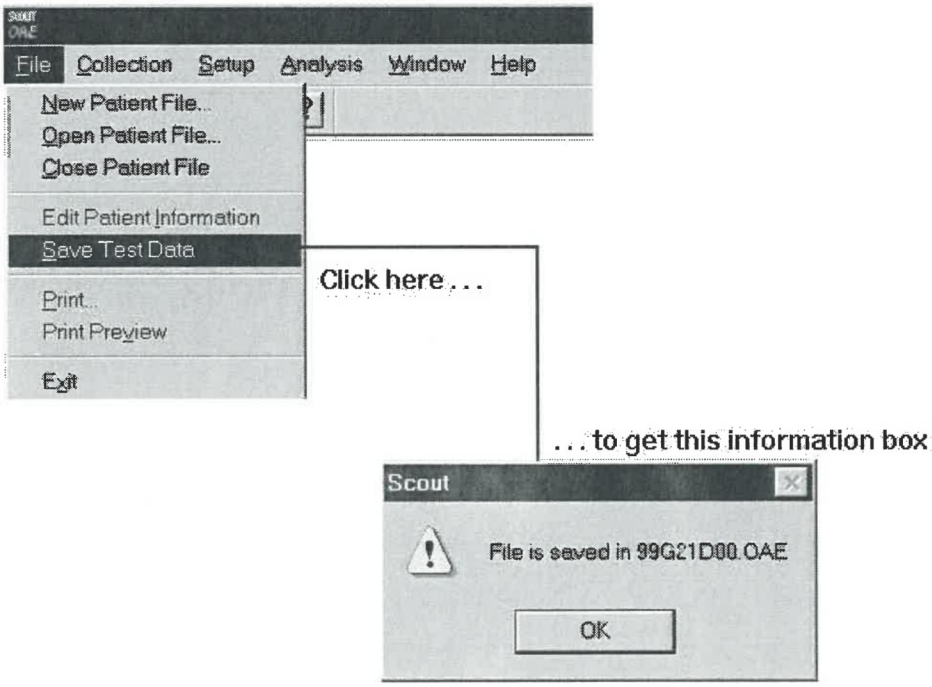
Select (click on) this item to launch a Patient Information display for the patient whose file you are viewing. You can then use that screen to edit that patient information. The illustration shows a typical Patient Information display. The table lists and describes its components:

The Patient Information display

Component	Description
Last Name field	This field holds the patient's last name (surname).
First Name field	This field holds the patient's first name.
Birth date field	This field holds the patient's date of birth. You can enter this date in any format. The example shows mm-dd-yy.
Patient ID field	This field holds an identification code for this patient. This code is often the patient's social security number.
Comment field	This free-form field holds comments you might want to make about the patient or the test. You can type as many as 68 characters (including spaces) in this field.
Ear radio buttons	Select (click on) the radio button that relates to the ear you test.
OK command button	Click on this command button to accept any changes you have made to this display
Cancel command button	Click on this command button to close the display without making any changes.
Clear all command button	Select this button to clear ("blank out") all of the fields in the Patient Information display.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Save Test data item



Use the Save Test Data item to save the data that the Scout gathers after testing a patient. When you select (click on) the Save Test Data item, the Scout system displays an information box that contains the name that it has assigned to the current patient data file. Scout codes this file name according to date and sequential order. To determine the date and sequential order of a data filename:

- The first two characters (displayed as numbers) represent the last two digits of the year.
- The third character (displayed as a letter) represents the month.
- The fourth and fifth characters (displayed as numbers) represent the day of the month.
- The sixth character is a "D" for DPOAE tests and a "T" for TEOAE tests.
- The seventh and eighth characters represent the numerical order in which the file was created.

For more information about filenames, turn to How to work with filename codes.

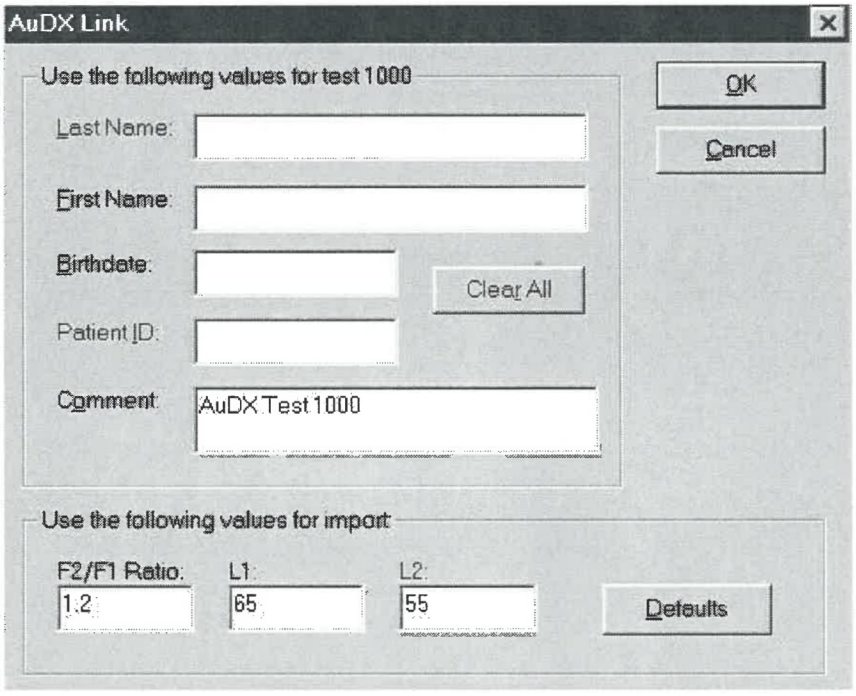
Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

The AuDX link import item



Select (click on) the AuDX Link import item to launch a dialog box that lets you import files from the AuDX testing device. The illustration shows a typical AuDX link dialog box. The table lists and describes its components:

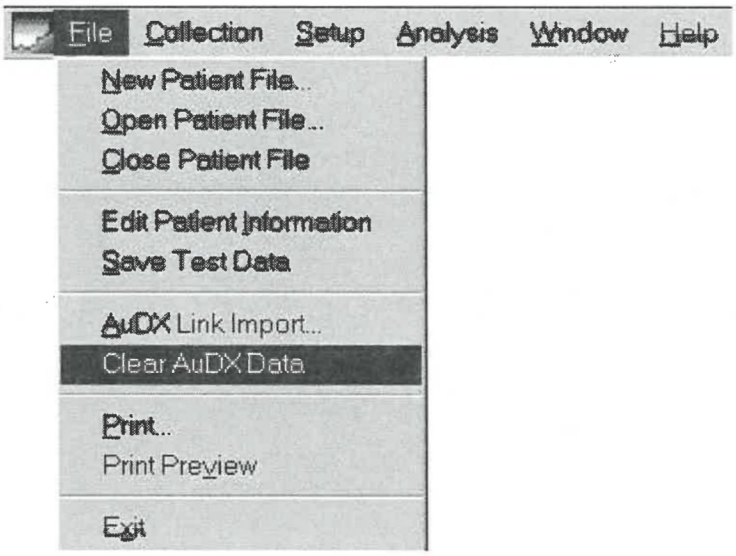
The AuDX link dialog box

Component	Description
Test number information	This line of information appears near the top of the AuDX link dialog box. It tells you which Test data set the Scout system is importing. Typically, users keep track of the files from the AuDX system manually. In the illustration, the Scout system is ready to import the file for test number 1000. Users must complete the other fields of the AuDX link dialog box based on the records they have for that test.
Last Name field	This field is for the last name (surname) of the patient in the test. In the illustrated example, enter the last name of the patient in test 1000.
First Name field	This field is for the first name of the patient in the test. In the illustrated example, enter the first name of the patient in test 1000.
Birth date field	This field is for the date of birth of the patient in the test. You can enter this date in any format.
Patient ID field	This field is for an identification code the patient in the test. This code is often the patient's social security number.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
Comment field	This free-form field holds comments you might want to make about the patient or the test. You can type as many as 68 characters (including spaces) in this field.
Import value fields	These fields hold values for the F2/F1 Ratio, the L1 parameter, and the L2 parameter. Values for these come from the test you are importing from the AuDX PLUS testing device.
Clear All command button	Select this button to clear ("blank out") all of the fields in the dialog box.
OK command button	Click on this command button to accept any changes you have made to this display
Cancel command button	Click on this command button to close the display without making any changes and cancel the entire import operation.

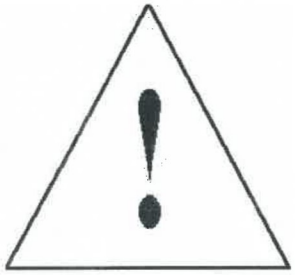
The Clear AuDX Data item



Select (click on) the Clear AuDX data item to clear all data files from the AuDX PLUS testing device. This item is only viable when an AuDX PLUS test box is connected to your personal computer.

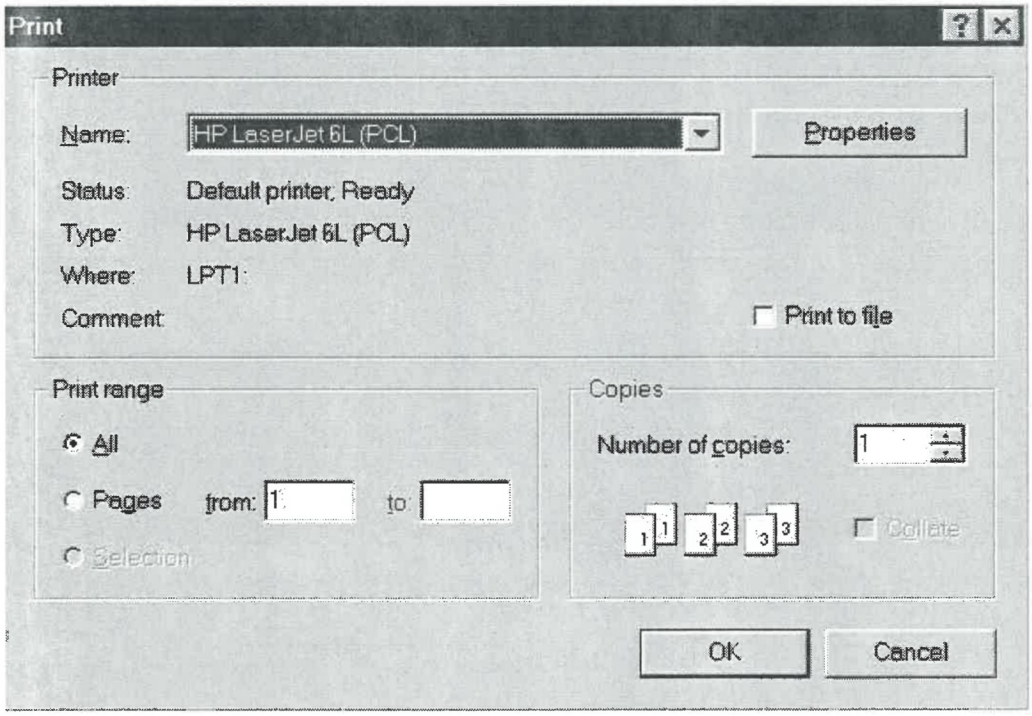
Copyright © 2003-2004
Bio-Logic Systems Corp

The Print item



NOTICE

MICROSOFT CORPORATION HAS THOROUGHLY DOCUMENTED THE PRINT DIALOG BOX. ILLUSTRATED PROCEDURES FOR ITS USE APPEAR IN THAT DOCUMENTATION. THIS DOCUMENTATION IS USUALLY AVAILABLE ON THE CD THAT ACCOMPANIED YOUR COMPUTER'S SOFTWARE SYSTEM. THE REMAINDER OF THE INSTRUCTIONS IN THIS PROCEDURE NEITHER CONTRADICT NOR SUPERCEDE ANY OF MICROSOFT'S INSTRUCTIONS. SHOULD QUESTIONS ARISE ABOUT THE PRINT DIALOG BOX OR ANY OTHER DIALOG BOX CONTROLLED BY THE MICROSOFT CORPORATION'S WINDOWS OPERATING SYSTEM SOFTWARE, FOLLOW THE MICROSOFT CORPORATION'S DOCUMENTATION.



Select (click on) the Print item to launch a standard, Windows "Print" dialog box. A dialog box similar to the one in the illustration appears whenever you want to print information from the Scout program. The table lists common components and presents brief descriptions. For more detailed information, see the documentation that accompanies the Microsoft® Corporation's Windows Operating System (usually on the Windows CD ROM) or the documentation that accompanies your printer.

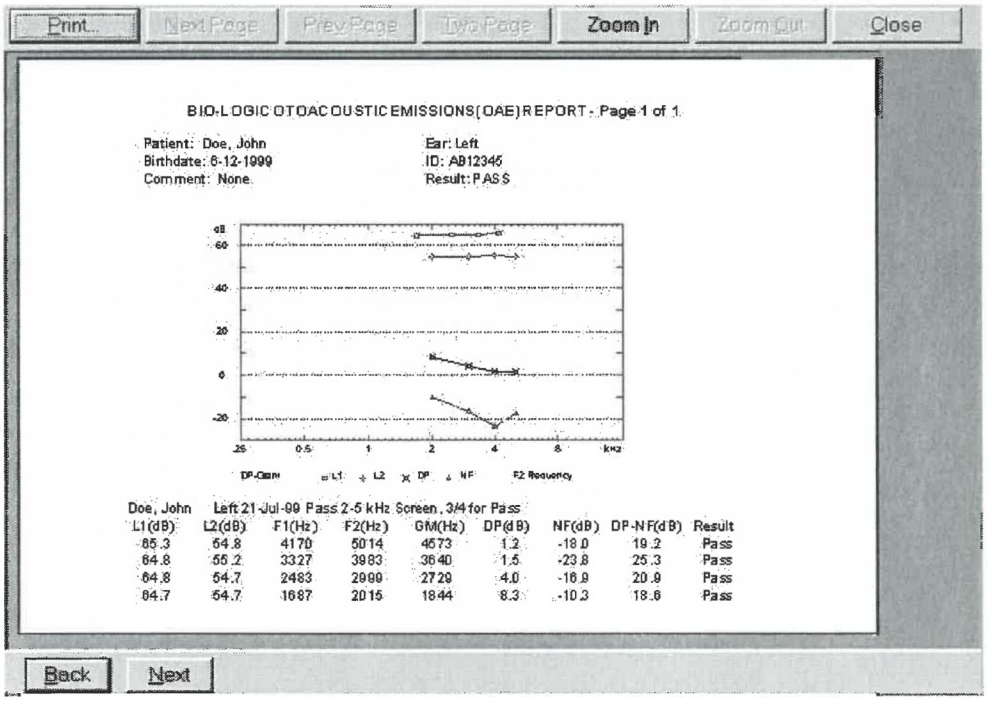
Copyright © 2003-2004
Bio-Logic Systems Corp

The Print dialog box

Component	Description	
The Name: list	This field holds a list of printers or other output devices you can use.	
The Properties command button	This button launches a series of dialog boxes that let you set properties (such as paper size or print quality) for your printer or output device.	
The Information area	This area of the dialog box gives you basic information about the output device you are using.	
Print to file checkbox	This checkbox determines whether you print the information to an Encapsulated Postscript file (box checked) or to the output device you have specified (box clear).	
Print range area	This area of this dialog box contains radio buttons and data entry boxes that determine the amount of data you print:	
	The Print range radio buttons	These radio buttons let you specify how many pages of output you want to produce. Options include: **All**: Use this radio button to print the entire contents of the file. In our example, the printer would produce two (2) pages of output. **Pages**: Use this radio button with the Print range data fields to print only those pages of data you want. In our example, the printer would produce only the second page of data. **Selection**: Use this radio button to print only data that you have highlighted in the file you are using.
	Print range data fields	These are data entry fields that work with the Pages radio button. They let you specify a range of pages you want to print. Type the first page you want to print in the from: field; type the last page you ant to print in the to: field.
The Copies area	This area of the dialog box sets criteria for the number of copies you want to produce:	
	Number of copies spin button	This spin button lets you set the number of copies you want the printer to produce. A count of more than 1 activates the Collate checkbox.
	Collate checkbox	This checkbox determines whether the printer collates multi-copied output (box checked) or simply prints the copies uncollated (box clear) .

Copyright © 2003-2004
Bio-Logic Systems Corp

The Print Preview item


Print...
Next Page
Prev Page
Two Page
Zoom In
Zoom Out
Close
BIO-LOGIC OTOACOUSTIC EMISSIONS(OAE) REPORT - Page 1 of 1
Patient: Doe, John
Birthdate: 6-12-1999
Comment: None
Ear: Left
ID: AB12345
Result: PASS
Doe, John Left 21-Jul-99 Pass 2-5 kHz Screen, 3/4 for Pass
L1(dB) L2(dB) F1(Hz) F2(Hz) GM(Hz) DP(dB) NF(dB) DP-NF(dB) Result
65.3 54.8 4170 5014 4573 1.2 -18.0 19.2 Pass
64.8 55.2 3327 3983 3640 1.5 -23.8 25.3 Pass
64.8 54.7 2483 2899 2729 4.0 -16.9 20.9 Pass
64.7 54.7 1687 2015 1844 8.3 -10.3 18.6 Pass
Back
Next

Select (click on) this item to launch a display that shows the patient data or report as it appears when printed. You can then use this display to view patient data, page through patient data, or print patient data. The illustration shows a typical Print Preview display. The table lists and describes its common command buttons.

The Print Preview display

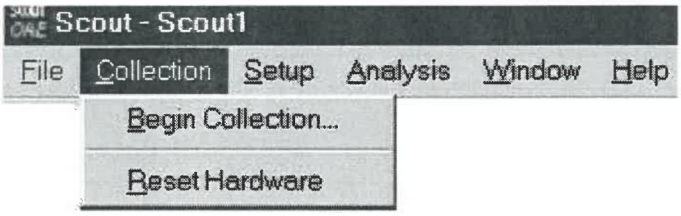
Common command buttons	Description
The Print command button	Click on this button to launch a standard, Windows Print dialog box. Use this dialog box to print the information on the preview screen. For more information, see The Print item or Microsoft® Corporation's Windows documentation.
The Next Page command button	Click on this button to display the page that follows the page on the preview screen This button is active (text in black) only if more than one page of information is available and if you are not viewing the last page of information in the list.

Copyright © 2003-2004
Bio-Logic Systems Corp

Common command buttons	Description
The Prev(ious) Page command button	Click on this button to display the page that precedes the page on the preview screen This button is active (text in black) only if more than one page of information is available and if you are not viewing the first page of information in the list.
The Two Page command button	Click on this button to display a "side-by-side" view of two pages of information. This button is active (text in black) only if more than one page is available. Note that the Next Page and Previous Page and the Next and Back command buttons advance or retreat the display two pages at a time after you select this command button.
The Zoom In command button	Click on this button to enlarge the view of the page. The mouse cursor changes its shape to a magnifying glass. Click on the Zoom In button to enlarge the size of the page as long as it is active (text black). Place the cursor on the page image and click the left mouse button to toggle between Zoom In and Zoom Out.
The Zoom Out command button	Click on this button to reduce the view of the page. The mouse cursor changes its shape to a magnifying glass. Click on the Zoom Out button to reduce the size of the page as long as it is active (text black). Place the cursor on the page image and click the left mouse button to toggle between Zoom Out and Zoom In
The Close command button	This button closes the preview display without printing information.

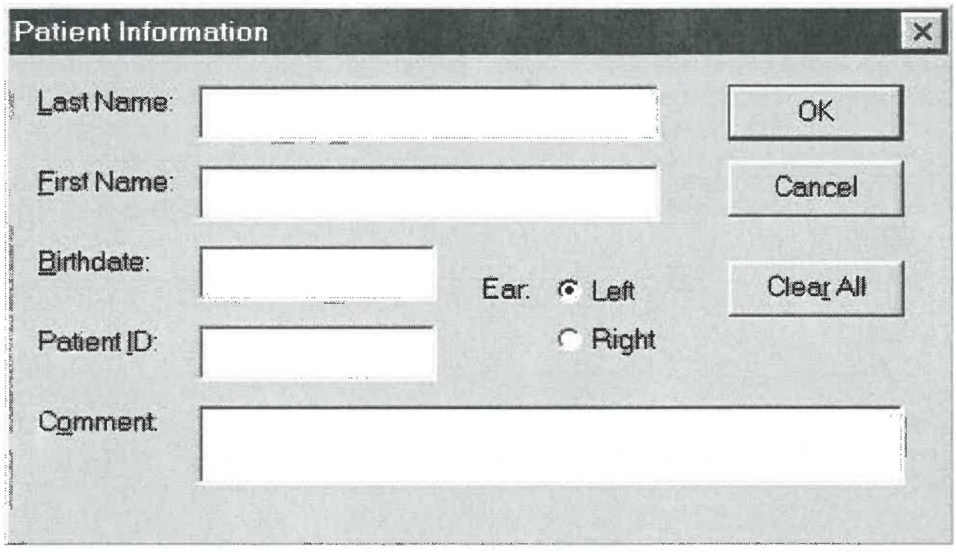
Copyright © 2003-2004
Bio-Logic Systems Corp

The Collection menu



The Collection menu is the second of the Main Menus. It contains two menu items: the **Begin Collection . . .** menu item and the **Reset Hardware** menu item. These two menu items let you set up or change parameter values used during a patient collection or reset the Scout system's hardware.

The Begin Collection item



Select (click on) the Begin Collection item to launch a "blank" Patient Information screen. Complete the fields in this screen to start collecting data for a new patient DPOAE test. This test has two phases.

The first phase, pre-test, checkfit, and calibration, measures the ear's response to a transient stimulus and then displays it on the screen as a temporal waveform and its spectrum. This helps users position the probe correctly. Ear canal responses to Channel A and Channel B stimuli also allow the program to calibrate the DPOAE test stimuli and adjust for ear canal resonance characteristics. The second phase, DPOAE testing, measures and averages the patient's physiologic response to the stimuli and then displays the information on each completed frequency as text and plotted graphs.

The illustration shows a blank Patient Information screen. For information about the components on this screen, turn to The Edit Patient Information item.

Copyright © 2003-2004
Bio-Logic Systems Corp

— *For TEOAE tests*

The program performs an automatic, in-the-ear calibration and adjusts the stimulus intensity level to the protocol's target value. If the calibration procedure is successful, the program proceeds automatically to the averaging phase. There, the Scout Sport system presents a click stimulus and measures the TEOAE response.

The program implements measurement-based stopping rules as defined in the protocol. The test stops when the criteria for stopping have been met or when averaging reaches the maximum number of samples in the protocol.

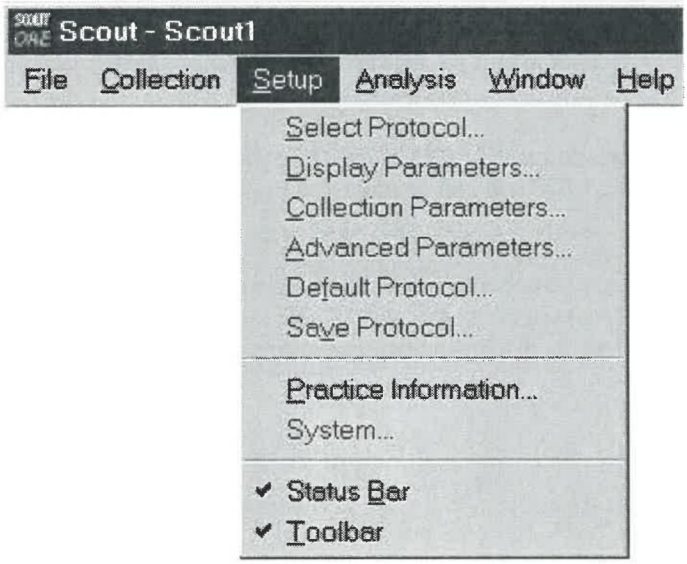
If the protocol includes criteria for assigning a Pass or a Refer recommendation, the overall result of the test appears in the text area of the screen along with the TEOAE spectrum and temporal waveform. At the conclusion of the test, the program displays a dialog box through which you can choose to save the data to the disk or discard the data.

The Reset Hardware item

Select (click on) the Reset Hardware item to test and troubleshoot the cable connection between the Scout Sport box or AuDX PLUS and the host computer. The program software automatically tries to send and receive a test signal to and from the Scout Sport box or AuDX PLUS. This test verifies whether the serial cable is connected to the correct serial port and is functioning correctly. For more information, turn to How to use the Reset Hardware item.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Setup menu



The Setup menu is the third of the Main Menus. Clicking on the Setup menu produces a drop-down list of menu items that display different dialog boxes or controls on the Scout display screens. The illustration above shows a typical Setup menu. The table below lists and describes the items in that menu.

Users can select either a TE or DP test protocol by selecting Setup from the main menu and Select Protocol from the drop down menu. The Scout Sport program assigns TE to the beginning of the protocol name automatically even if the user did not include these characters in the name.

A TE protocol includes various setup parameters that define the way the Scout Sport performs the measurement and displays the data. The Setup menu contains three drop-down items. These drop-down items are Display Parameters, Collection Parameters, and Advanced Parameters. Selecting any of them launches a dialog box that lets you set up protocol parameters. The values that you set in all three of these dialog boxes constitute the definition of a protocol.

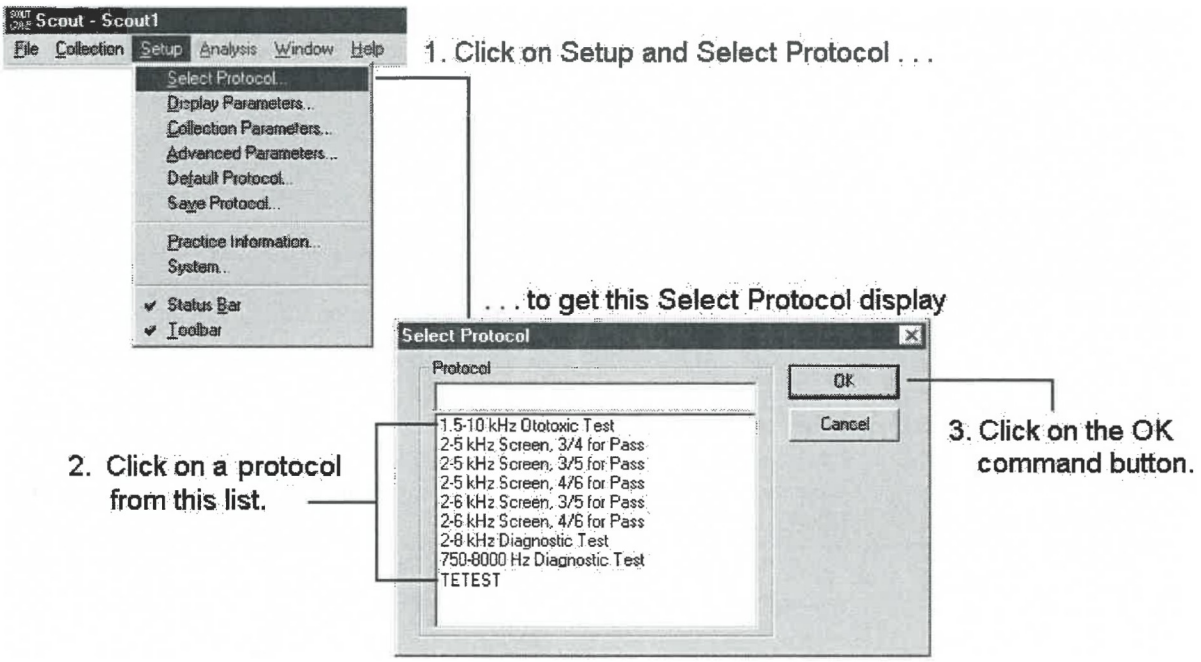
Copyright © 2003-2004
Bio-Logic Systems Corp

The Setup menu

Menu item	Description
Select Protocol	Select (click on) this menu item and the Scout program displays a screen that lets you select protocols (test setups) from a list of available ones. For more information, turn to How to use the Select protocol item.
Display Parameters	Select (click on) this menu item and the Scout program displays a screen that lets you change ranges in the current display. For more information, turn to How to use the Display Parameters menu item.
Collection Parameters	Select (click on) this menu item and the Scout program displays a screen that lets you change the parameter values that you use during a patient collection. For more information, turn to How to use the Collection Parameters menu item.
Advanced Parameters	Select (click on) this menu item and the Scout program displays a screen that lets you change additional parameter values that you use during a patient collection. For more information, turn to How to use the Advanced Parameters item.
Default Protocol	Select (click on) this menu item and the Scout program displays a screen that lets you save a favorite protocol as the program default. For more information, turn to The Default Protocol item.
Save Protocol	Select (click on) this menu item and the Scout program displays a screen that lets you save either edited or new protocols to the Select Protocol menu list (Turn to How to use the Select Protocol menu item.) For more information, turn to The Save Protocol item.
Practice Information	Select (click on) this menu item and the Scout program displays a screen that lets you enter details about the practice that appear at the top of any report you print out. For more information, turn to The Practice Information item.
System (setup)	Select (click on) this menu item and the Scout program displays a screen that lets you configure settings for Scout system peripherals. For more information, turn to The System (setup) item.
Status Bar	Select (click on) this menu item and the Scout program lets you show (checkmark visible) or hide (checkmark not visible) the Status Bar at the bottom of the Scout display screen. For more information, turn to The Status Bar item.
Toolbar	Select (click on) this menu item and the Scout program lets you show (checkmark visible) or hide (checkmark not visible) the Scout Toolbar. For more information, turn to How to use the toolbar.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Select Protocol item



When you select (click on) the Select Protocol item, the Scout program activates the Select Protocol display. This display lets you replace the current protocol with any protocol in the list. The program uses the new protocol's parameters until you select a different protocol or exit the program.

The illustration shows the Select Protocol display. The table lists and describes its components.

Select Protocol display

Component	Description
List of protocols	This area of the display contains a list of protocols that are available. Each of these protocols has a different set of display, collection, and advanced parameters that determine how the Scout program runs a test. When you select one of the protocols from this list and click on the OK command button, the program uses that protocol's parameters until you select a different protocol or exit the program. For more information, turn to How to use the Display Parameters menu item, to How to use the Collection Parameters menu item, or to How to use the Advanced Parameters item.
OK command button	Click on this command button to select the protocol you have highlighted.
Cancel command button	Click on this command button to close the display without selecting a protocol.

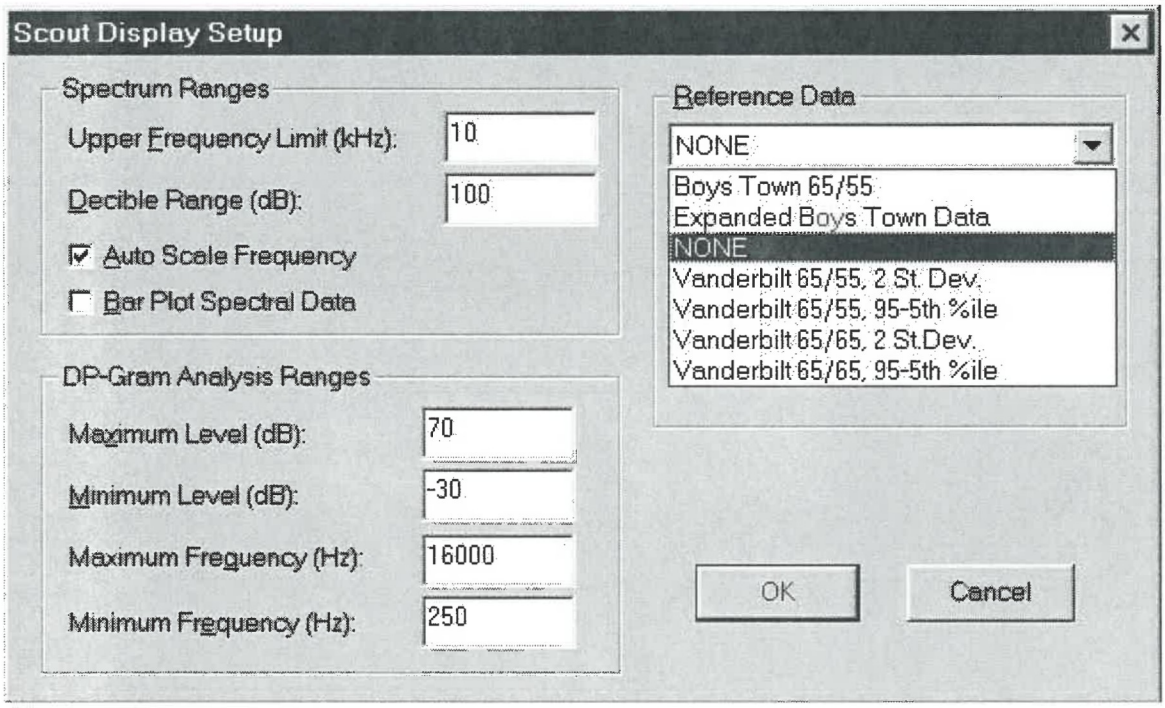
Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Display Parameters item



When you select (click on) the Display Parameters item, the Scout program activates a Scout Display Setup screen for changing the Spectrum and DP Gram Analysis ranges of and reference data for the current display. The illustration shows the Scout Display Setup screen. The table lists and describes its components. For more information, turn to How to use the Select protocol item, to How to use the Collection Parameters menu item, or to How to use the Advanced Parameters item.

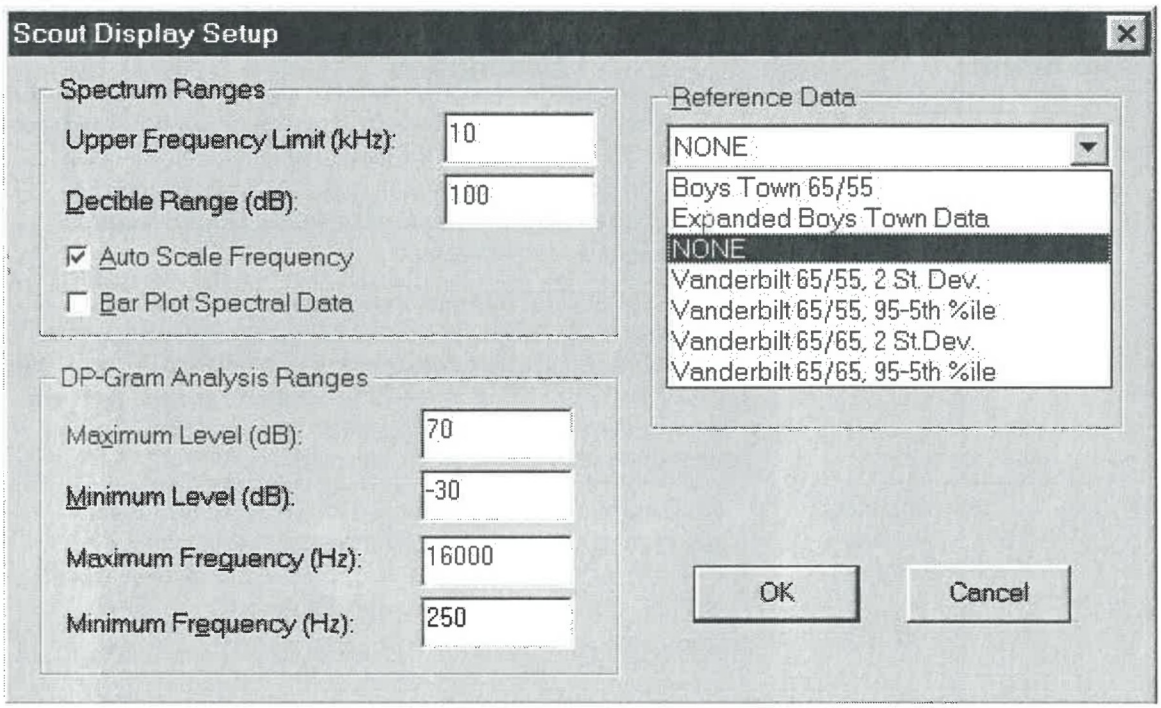
The Scout Display Setup screen

Component	Description	
Spectrum Ranges area	This area of the display contains fields and checkboxes that let you define the response spectrum graph.	
	Upper Frequency Limit (kHz) field	This field determines the fixed, upper frequency limit of the response spectrum when users leave the Auto Scale Frequency option unchecked. If the option is checked the program uses and autoscale value.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description	
Spectrum Ranges area (continued)	Decibel Range (dB) field	This field determines the intensity range of the response spectrum display. The program uses the highest amplitude signal that it measures during collection as the absolute upper limit of the intensity scale. It subtracts the value for the Decibel Range to obtain the absolute lower limit. For example, if the measured peak-to-peak amplitude in the spectrum is 65 dB and the Decibel Range is 100, then the upper limit of the display's vertical axis will be 65 dB and the lower limit of the display's vertical axis will be -35 dB. In general, users can set this value by considering the intensity of the stimuli and the intensity of the noise floor environment.
	Autoscale Frequency checkbox	This control defines the horizontal axis range of the response spectrum graph. Users can toggle the autoscaling option ON or OFF by clicking on the checkbox preceding the option, clicking on the text, or simultaneously pressing the Alt and the A keys. If the checkbox contains a checkmark, the program autoscales the horizontal axis on the response spectrum. This means that it uses the frequencies of the stimuli and Distortion Product. During this process, only the upper frequency autoscales. The limit on the lower frequency scale permanently 0 Hz. This forces the Scout program to display a minimum frequency range of 0 to 2000 Hz. If the checkbox contains no checkmark, the horizontal axis on the response spectrum remains fixed from 0 Hz to the value in the Upper Frequency Limit (kHz) field.
	Bar Plot spectral data checkbox	If the checkbox contains a checkmark, the program displays spectral data as a bar plot. A bar plot gauges and illustrates frequency widths between points by drawing bars across them The bar illustrates the width of the frequency channel. If the checkbox contains no checkmark, the program displays spectral data as a "peaks and valleys" graph.

Copyright © 2003-2004
Bio-Logic Systems Corp



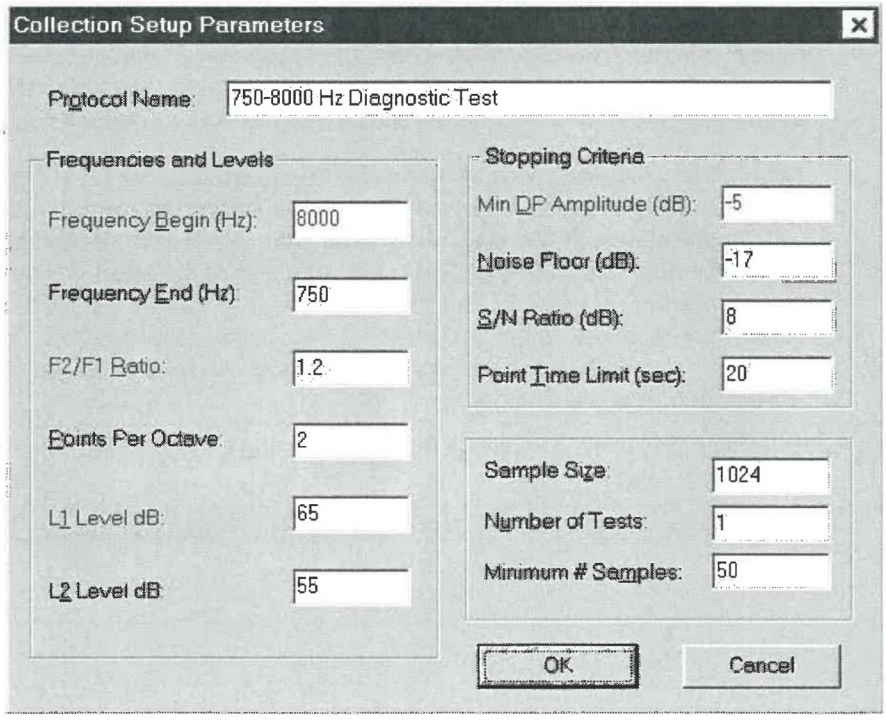
Component	Description	
DP-Gram Analysis Ranges	This area of the display contains fields that let you setup the DP-Gram.	
	The Maximum Level (dB) field	This parameter specifies the upper boundary of the vertical axis on the DP-Gram during data analysis. Use the following information to determine the value for this parameter. —To view the stimulus level plot, set the Maximum Level parameter higher than the stimulus levels. —To view only the DP and NF amplitudes, set the Maximum Level parameter 5 to 10 dB higher than the highest predicted DP Amplitude is likely to be.
	The Minimum Level (dB) field	This parameter specifies the lower boundary of the vertical axis on the DP-Gram during data analysis.
	The Maximum Frequency (Hz) field	This parameter specifies the upper limit of the horizontal axis on the DP-Gram during data analysis. Enter a value higher than the highest F2 Frequency tested in the protocol to display all data points in the DP-Gram.
	The Minimum Frequency (Hz) field	This parameter specifies the lower limit of the horizontal axis on the DP-Gram during data analysis. Enter a value lower than the lowest F2 Frequency tested in the protocol to display all data points in the DP-Gram.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
Reference Data list	This field contains a drop-down list of the Reference data files that you have available for use. Bio-logic Systems Corp includes several reference data files with the program software. Users can display a selected reference set on any DP-Gram that has a test protocol with the same L1 and L2 levels as the selected reference set. **Note: The program must achieve the designated L1 or L2 values for the first test frequency in order to display the reference set boundary lines on the DP-Gram. If the boundary lines are not visible, verify the probe is properly inserted in the patient's ear and the calibration is correct before continuing. You must select "activate display" under analysis to show reference data on data windows that are already open when you choose the reference set. For more information about these files, turn to Reference data file formats.**
OK command button	Click on this command button to accept any changes you have made to this display.
Cancel command button	Click on this command button to close the display without making any changes.

Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Collection Parameters item



When you select (click on) the Collection Parameters item, the Scout program activates a Collection Setup Parameters Display for changing the parameter values that the program uses during a patient collection. The illustration shows the Collection Setup Parameters display. The table lists and describes its components. For more information, turn to How to use the Select protocol item, to How to use the Collection Parameters menu item, or to How to use the Advanced Parameters item.

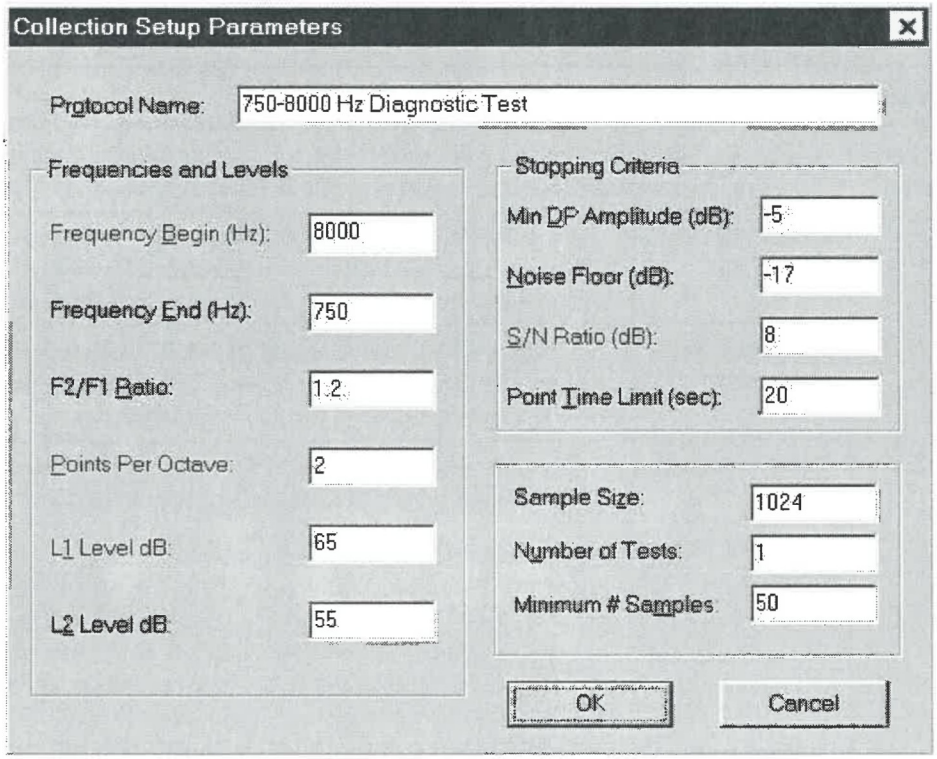
The Collection Setup Parameters display

Component	Description
Protocol Name field	This field lets you enter a Protocol name of as many as 40 characters. Bio-logic Systems Corp suggests that you use Protocol names that imply how you use the protocol or that reflect a distinguishing characteristic of that protocol. This can help users identify the Protocol quickly in a list. The name you enter automatically appears in the "List of protocols" field of the Select Protocol display (turn to "How to use the Select Protocol menu item").

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description	
Frequency and Levels area	This area of the display contains fields that let you set parameters for the frequencies used and levels that occur during collection.. The fields in this area are:	
	Frequency Begin (HZ) field	This parameter value defines the beginning F2 frequency for the DP measurement and determines if the test is conducted from a high to a low frequency or from a low to a high frequency.
	Frequency End (HZ) field	This parameter value defines the ending F2 frequency for the DP measurement and determines if the test is conducted from a high to a low frequency or from a low to a high frequency.
	F2/F1 ratio field	This parameter value defines the ratio of F2 to F1. In most cases, a ratio of 1.2 will obtain the largest DP response amplitude.
	Points per Octave field	This parameter value defines the number of data points measured per octave for the specified range of F2 frequencies. The Scout program uses a default sampling rate of 48,000 Hz. The maximum number of data points per octave depends on the Sample size, the sampling rate, and the frequency range per octave. The maximum number of points per octave as 20 (for 1000 to 10000 Hz). In the 500-1000 Hz range, the maximum number of points per octave is 10 for a sample size of 1024 (46 Hz resolution) and 18 for a sample size of 2048 (23 Hz resolution).
	L1 Level dB field	This parameter value defines the intensity level of F1, which is the lower of the two primary frequency stimuli used in the DP measurement. Because intensities of 80 dB or higher can create artifactual emissions, users may want to consider a more moderate intensity level when editing this parameter.
	L2 Level dB field	This parameter value defines the intensity level of F2, which is the higher of the two primary frequency stimuli used in the DP measurement. Because intensities of 80 dB or higher can create artifactual emissions, users may want to consider a more moderate intensity level when editing this parameter. **NOTE: At some frequencies, the program imposes an intensity limit to avoid microphone saturation.**

Copyright © 2003-2004
Bio-Logic Systems Corp



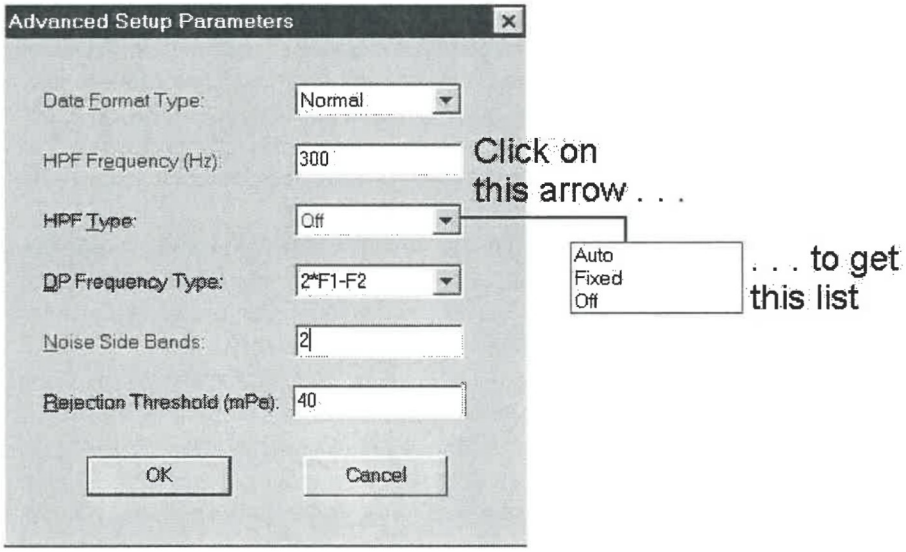
Component	Description	
Stopping Criteria area	This area of the display contains fields that you can use to stop the Scout system's data collection process. The fields in this area are:	
	Min DP Amplitude (dB): field	This parameter value tells the program to stop collecting and proceed to the next frequency condition as soon as the criterion for the Min DP Amplitude and the S/N Ratio is met.
	Noise Floor (dB): field	This parameter value determines one of three criteria for ending the averaging process before the Point Time Limit is reached. After a minimum of 200 sweeps, the program will automatically stop averaging and plot the data point on the DP-Gram if the noise floor level is either the same or lower than the entered value.
	S/N Ratio (dB): field	This parameter value determines one of three criteria for ending the averaging process before the Point Time Limit is reached. The program will automatically stop averaging and plot the data point on the DP-Gram if the criterion for the S/N Ratio level and Min DP Amplitude are met.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description	
Stopping Criteria area (continued)	Point Time Limit (sec): field	This parameter value determines the maximum artifact free averaging time per data point. The program will automatically continue averaging until the Point Time Limit is met, unless the Min DP Amplitude and S/N Ratio or Noise Floor criterion are met beforehand. Once averaging ends, the program will plot the data point on the DP-Gram and begin measurements of the next frequency condition.
Sample Size field	This parameter value is used in conjunction with the Minimum # Samples parameter to determine the minimum amount of averaging time used during a test. Both the Sample Size and Minimum # Samples parameter values affect the minimum amount of averaging time. Examples follow: —If the Sample Size is 1024 and the Minimum # Samples is 25, then the minimum amount of averaging time will be 1 second in duration. —If the Sample Size is 2048 and the Minimum # Samples is 25, then the minimum amount of averaging time will be 2 second in duration. —If the Sample Size is 2048 and the Minimum # Samples is 50, then the minimum amount of averaging time will be 4 second in duration. Longer averaging will prolong the test time, but reduce the noise floor to a minimum. When the test time is the most critical factor, as in a screening test, set the Sample Size and Minimum # Samples parameters to lower values. When minimizing the noise floor levels is more critical than the length of the test, set the Sample Size and Minimum # Samples parameters to higher values.	
Number of Tests field	This parameter value determines the number of times the program performs a test sequentially. The program will superimpose the data in the active data window.	
Minimum # Samples field	This parameter value determines the number of sweeps the program uses in each set during the averaging process. It also interacts with the Sample Size to determine the minimum amount of averaging time. As a result, doubling the Minimum # Samples value, will double the minimum averaging time. Changes to the Minimum # Samples and the Sample Size parameter values affect the minimum amount of averaging time. Examples follow: —If the test protocol uses a Minimum # Samples value of 25 (default) and a Sample Size value of 1024, then the minimum amount of averaging time will be 1 second in duration. —If the Minimum # Samples value is doubled to 50 and the Sample Size stays at 1024, then the minimum amount of averaging time will be 2 seconds in duration.	
OK command button	Click on this command button to accept any changes you have made to this display.	
Cancel command button	Click on this command button to close the display without making any changes.	

Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Advanced Parameters item



When you select (click on) the Advanced Parameters item, the Scout program activates an Advanced Setup Parameters display for changing parameter values used during a patient collection. The illustration shows the Advanced Setup Parameters display. The table lists and describes its components. For more information, turn to How to use the Select protocol item, to How to use the Collection Parameters menu item, or to How to use the Advanced Parameters item.

The Advanced Setup Parameters display

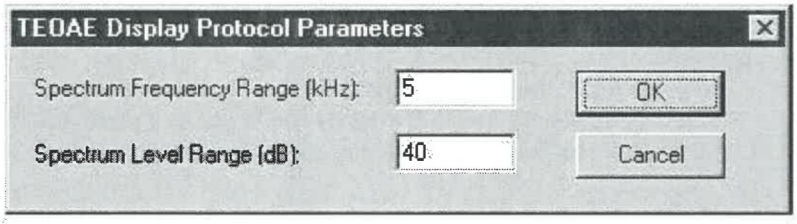
Component	Description
Data Format Type field	This parameter interacts with options in the Collection Parameters menu to save entered values and calculations with the data file. Currently, the Scout Sport windows program only supports the Normal option: Normal: Currently the default, this parameter option saves the DP Frequency values defined in the original default program provided with the system..
HPF Frequency (Hz) field	This parameter interacts with the HPF Type parameter (see following parameter description) to determine what portion of the response should be digitally filtered. The program automatically filters any response below the value in this field if you have set the HPF type (see below) to FIXED. If the HPF Type is set to AUTO or OFF, the program ignores the current value in this field.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
HPF Type field	This parameter provides the following options: AUTO: filters the response beginning at ½ the value of F2, making the high pass filtering different for each frequency condition. As a result, this option can reduce artifacts by reducing frequency measurements below the area of interest for the DP frequency. FIXED: uses the value entered in the HPF Frequency for all frequency conditions in the DP-Gram. OFF: turns OFF the High Pass Response Filtering.
DP Frequency Type field	This parameter determines the frequency at which the program makes and displays DP frequency measurements during collection and analysis. Currently, only the 2*F1-F2 default option is available.
Noise Side Bands field	This parameter determines how many frequency bands on either side of the DP frequency the Scout program averages to determine the noise measurement. Only the values 1, 2, and 3 are acceptable in this field. The width of frequency bands is determined by the Sample Size value. For example: —Using a Sample size of 1024 will create a 50 Hz wide frequency band. —Using a Sample size of 2048 will create a 25 Hz wide frequency band.
Rejection Threshold (mPa) field	This parameter determines the default level of artifact rejection. For example, a default level of 30 mPa rejects data when artifacts occur because of patient movement (such as swallowing). Users can edit and save this value with the protocol.
OK command button	Click on this command button to accept any changes you have made to this display.
Cancel command button	Click on this command button to close the display without making any changes.

Copyright © 2003-2004
Bio-Logic Systems Corp

TEOAE Display Parameters Setup



The illustration shows the TEOAE Display Protocol Parameters setup dialog box. The table lists and describes its components:

The TEOAE Display Protocol Parameters Setup dialog box

Component	Description
Spectrum Frequency Range (kHz) field	The Spectrum Frequency Range field lets you enter a value that defines the upper limit of the spectrum display of the TE response. The lower limit is fixed at a value of 0 Hz. The minimum and maximum allowable values are 1 and 10, respectively.
Spectrum Level Range (dB) field	The Spectrum Level Range field lets you enter a value that defines the upper limit of the spectrum display of the TE response. Range 20-90.
OK command button	Select (click on) this command button to accept the values that currently appear in the fields (original or changed) and close the dialog box.
Cancel command button	Select (click on) this command button to close the dialog box without changing the original values in the fields.

To gain access to the TEOAE Display Protocol Parameters setup dialog box:

1. Select Setup from the Main Menus.

   A drop-down list of items appears.
2. Select Select Protocol from the drop-down list.

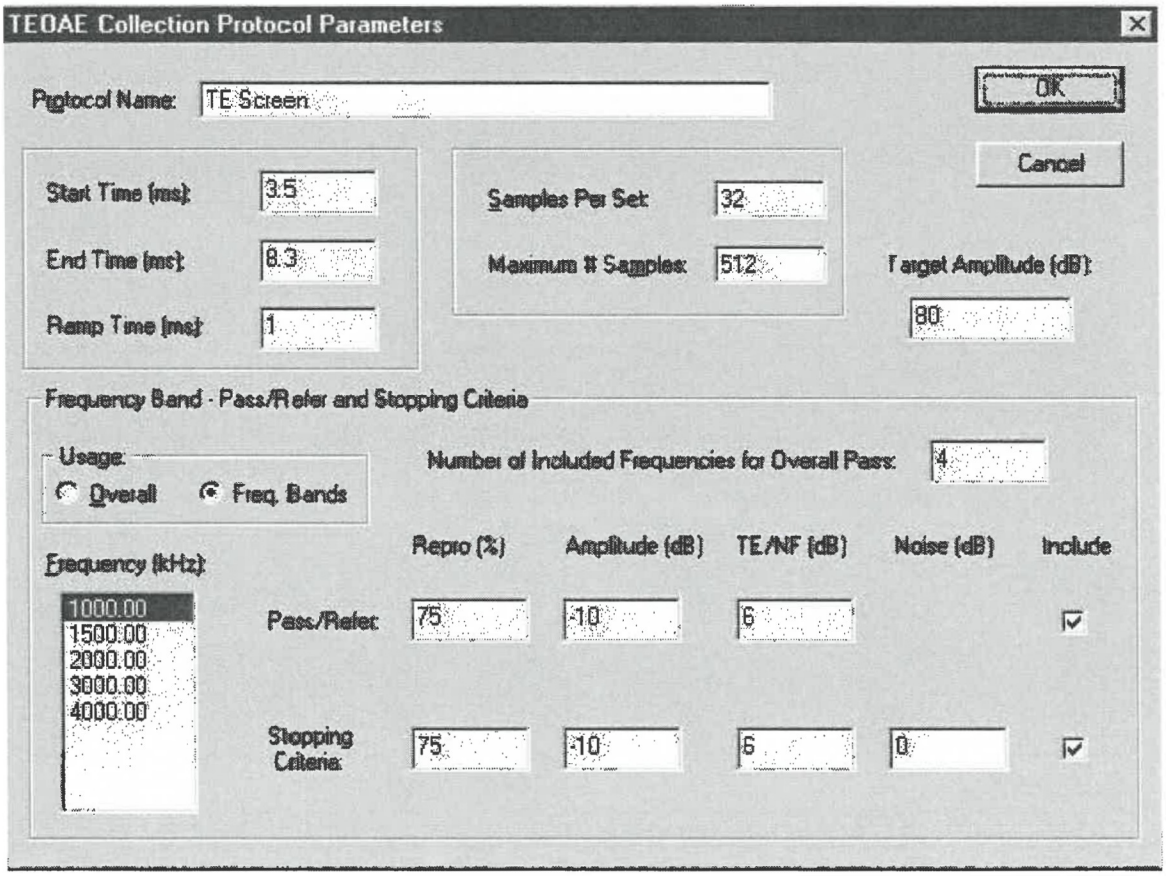
   A Select Protocol dialog box appears.
3. Select a TE protocol from the Select Protocol list.
4. Select the OK command button.

   This closes the Select Protocol dialog box.
5. Select Setup from the Main Menus.

   A drop-down list of items appears.
6. Select Display Parameters from the drop down list.

Copyright © 2003-2004
Bio-Logic Systems Corp

TEOAE Collection Parameters Setup

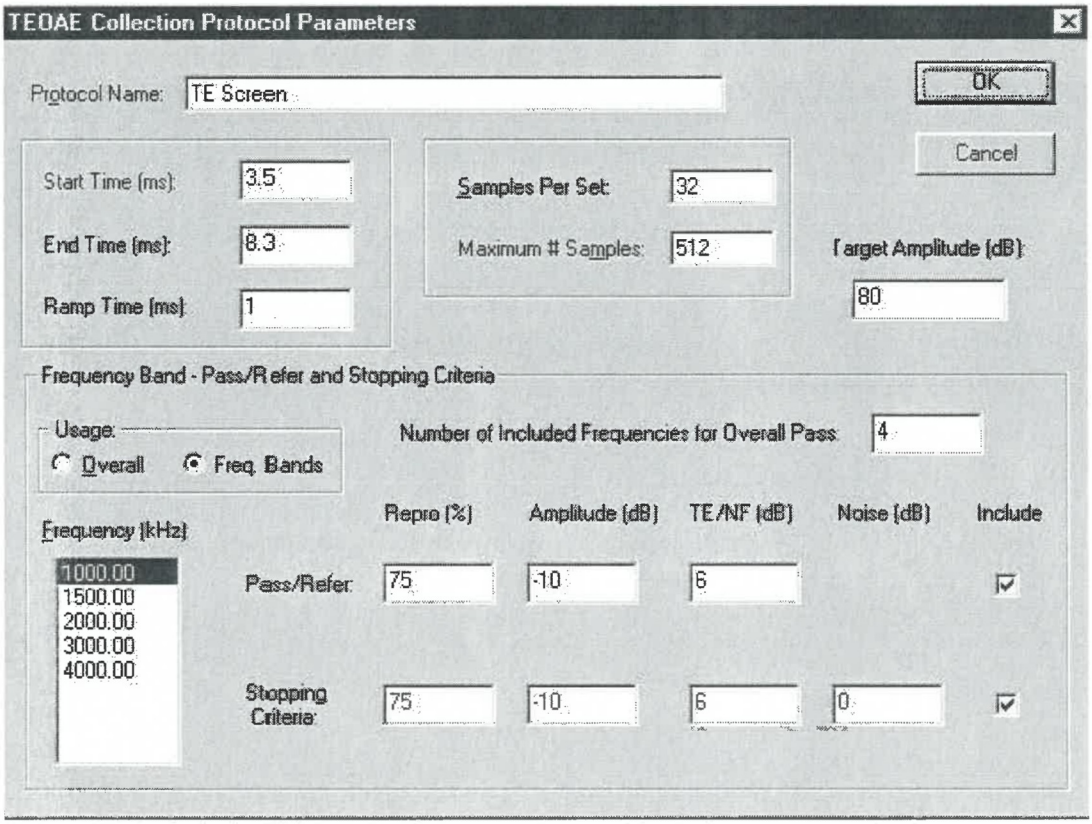


The illustration shows the TEOAE Collection Protocol Parameters setup dialog box. The table lists and describes its components:

The TEOAE Collection Protocol Parameters Setup dialog box

Component	Description
Protocol Name field	Users can create a descriptive protocol name when creating a new protocol. To edit an existing protocol, change the information in the fields you want to modify. Then, save the protocol without changing the name. If you enter a new protocol name in the Protocol Name field, the program saves the protocol to the protocol list as a new item without overwriting the original protocol.
Start Time field	The start time field lets you determine the averaging delay time imposed on the epoch to eliminate the stimulus artifact. This entry must be between 3.5 and 7.0 ms. The start time affects the TE response because long delays may preclude achieving a good response from the portion of the cochlea responsible for high frequency sensitivity.

Copyright © 2003-2004
Bio-Logic Systems Corp

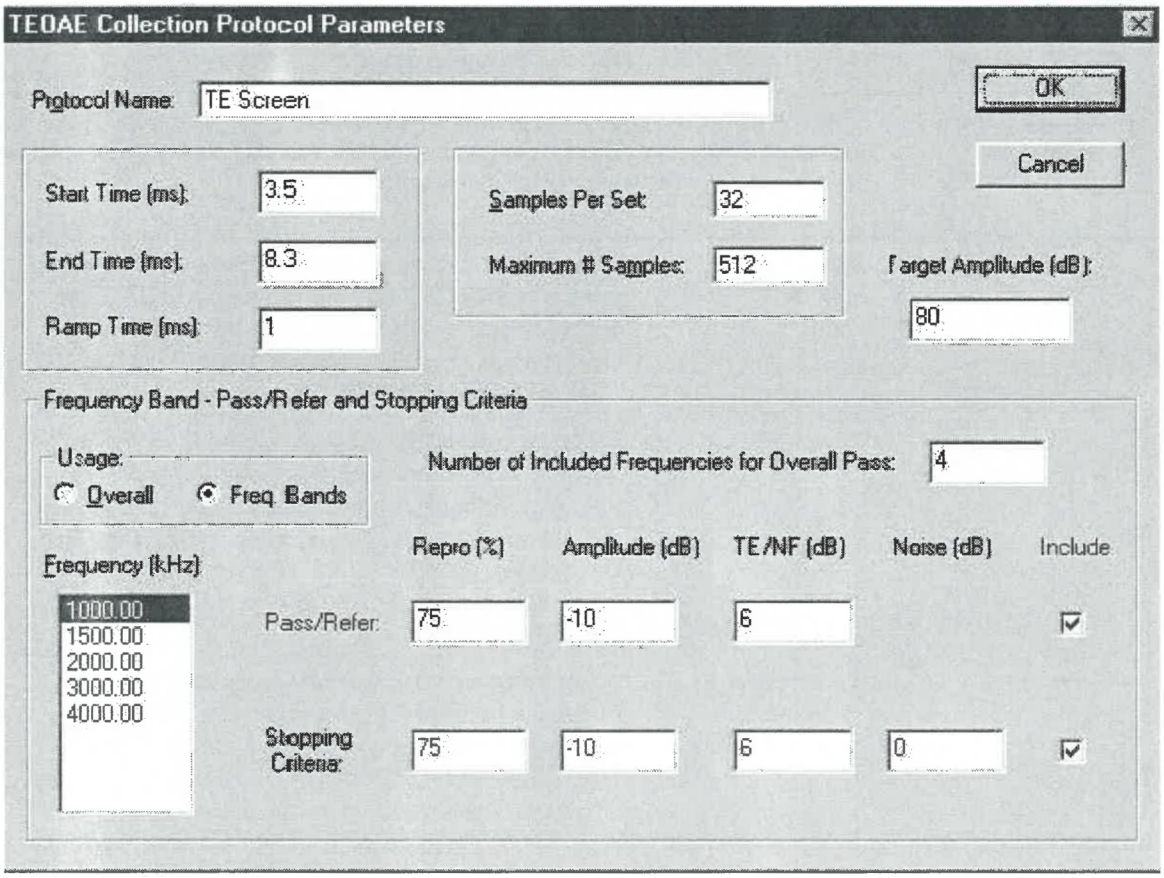


Component	Description
End Time field	The end time defines the duration of the averaging epoch of the TE response. This entry must be between 5.0 and 8.3 ms. The duration of the epoch affects the TE response because a short duration may preclude achieving a good response from the portion of the cochlea responsible for low frequency sensitivity.
Ramp Time field	The ramp time defines the duration from the start time until the TE response achieves its full amplitude. The default setting is 1 msec.
Samples Per Set field	The samples per set value determines the minimum number of samples that must be averaged before data appears on the screen. Range = 2 to 200.
Maximum # Samples field	The maximum number of samples determines the duration of the TE test if the test fails to meet stopping criteria (described below). The limits for this field range from 200 to 10,000. As an example, if no artifacts occur during a test, and the maximum # of samples is 512, the test duration is approximately 6 seconds. Doubling this value doubles the maximum duration of the test. The presence of artifacts during the test can further prolong test time.
Target Amplitude field	The target amplitude value determines the overall amplitude of the click stimulus during the TE test. During the pre-test calibration procedure the program measures the amplitude of the click stimulus and adjusts it to achieve the target amplitude in the patient's ear canal. Limits: 0 to 80 dB SPL.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description	
Frequency Band – Pass/Refer and Stopping Criteria area	This area of the dialog box lets you set up the frequency bands that are evaluated during the TE test. You can also set up the stopping rules and pass criteria for these frequency bands in this area.	
	Usage radio buttons	The selection in the Usage area determines whether the program applies the stopping and pass criteria to one overall frequency band of 1.2-3.5 kHz or to a combination of smaller frequency bands including 1000, 1500, 2000, 3000 and 4000 Hz.
	Overall	Select Overall and the program applies the stopping rules and pass criteria to that frequency area of the response. Although the response amplitude values for the individual frequency bands also appear on the TE-gram screen, they do not affect the termination of the test or the assignment of the pass or refer recommendation.
	Frequency Band	Select Frequency Band and the program applies the stopping rules and pass criteria to a user defined combination of the frequency bands centered at 1000, 1500, 2000, 3000 and 4000 Hz. Although the response amplitude values for the overall band also appear on the TE-gram screen, they do not impact the termination of the test or the assignment of the pass or refer recommendation.
Number of Included Frequencies for Overall Pass field	This field lets you enter a value that is equal to or less than the number of frequencies in the Frequency List for which the Include field is checked. This field determines how many of the frequency bands in the Pass recommendation must meet the pass criteria before the program assigns a Pass recommendation for the overall test. You can choose to require that the program must assign a Pass recommendation at all or some portion of the included frequency bands.	
Frequency List	The items in the frequency list change depending on the radio button that you choose in the Usage options area. Select the Overall option and only one frequency band, 1.2-3.5 kHz displays in the frequency list. Select the Frequency Band option and five frequencies appear in the list, 1000, 1500, 2000, 3000 and 4000 Hz. You can set the stopping rules and pass criteria can be set for each of the frequency bands by highlighting each frequency in the list, one at a time, and then placing values in the Pass/Refer Criteria and Stopping Criteria fields. Or, if you prefer that one or more of the frequency bands is not part of the stop criteria or of the criteria for assigning a pass or refer indicator, uncheck the "Include" checkbox.	

Copyright © 2003-2004
Bio-Logic Systems Corp

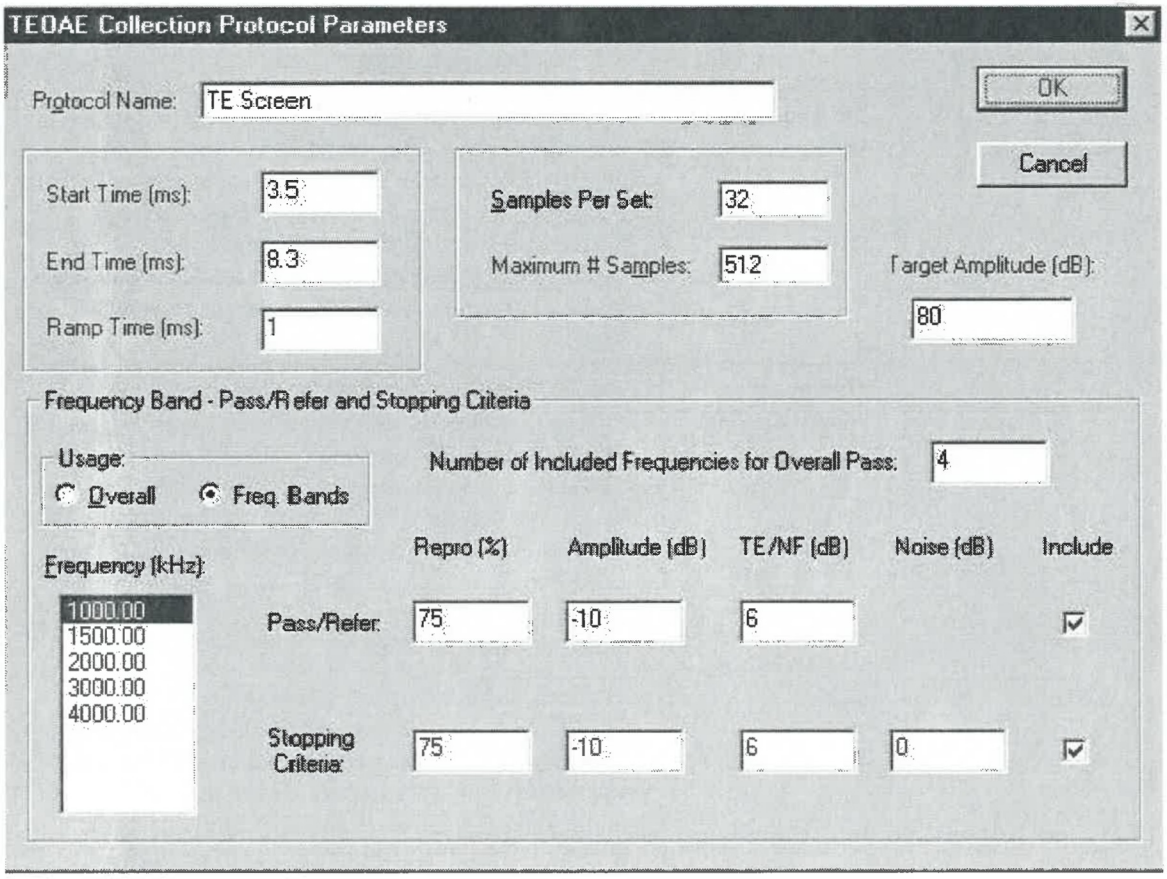


Component	Description	
Pass/Refer Criteria fields	This row of fields lets you set values that the program must meet to automatically assign a Pass or Refer recommendation. The values in this row are specific to the frequency that is highlighted in the Frequency List.	
	Reproducibility field	The reproducibility field lets you enter a percent value (0-100% range) that the test must achieve for the highlighted frequency in the Frequency List so the program can display a Pass result at that frequency. If you prefer that reproducibility is not a factor in the pass recommendation, set this value very low (for example, 0) to negate its effect. Reproducibility defines how well two separate TE Response averages relate to one another. This relationship is expressed via a percentage. Many published studies use a reproducibility criterion of 70-75% to assign a Pass recommendation to the TE response.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description	
Pass/Refer Criteria fields (continued)	TE Amplitude field	The TE Amplitude field lets you enter a minimum amplitude value (-20 to 50 dB SPL). The test must achieve that value for the highlighted frequency in the Frequency List for a Pass result to appear at that frequency. If you prefer that TE amplitude is not a factor in the pass recommendation, set this value very low (for example, -10 dB or greater) to negate its effect.
	TE-NF Amplitude field	The TE-NF Amplitude field lets you enter a minimum difference value (0 to 90) between the TE amplitude and the noise floor (NF) amplitude. The test must achieve that value for the highlighted frequency in the Frequency List for a Pass result to appear at that frequency. If you prefer that TE-NF amplitude is not a factor in the pass recommendation, set this value very low (for example, 0 dB) to negate its effect.
	Include (checkbox)	The Include checkbox lets you enable or disable the Pass/Refer criteria settings for the highlighted frequency in the Frequency List. Click on this checkbox until a checkmark appears to include the criteria for the highlighted frequency in the Pass/Refer recommendation. Click on this checkbox until no checkmark appears to exclude the frequency's criteria.
Stopping Criteria fields	This row of fields lets you set values that must be met for the program to automatically terminate the test. The values in this row are specific to the frequency that is highlighted in the Frequency List. However the program does not end the test until the test meets the stopping criteria at all of the included frequencies or until it reaches the number of sweeps total timeout.	
	Reproducibility field	The reproducibility field lets you enter a percent value (0 to 100%) that the test must achieve for the highlighted frequency in the Frequency List. The program then ends the test. If you prefer that reproducibility is not a factor in the stopping criteria, set this value very low (for example, 0) to negate its effect.
	TE Amplitude field	The TE Amplitude field lets you enter a minimum amplitude value (-20 to 50 dB SPL) that the test must achieve for the highlighted frequency in the Frequency List. The program then ends the test. If you prefer that TE amplitude is not a factor in the stopping criteria, set this value very low (for example, -10 dB or greater) to negate its effect.

Copyright © 2003-2004
Bio-Logic Systems Corp



Component	Description	
Stopping Criteria fields (continued)	TE-NF Amplitude field	The TE-NF Amplitude field lets you enter a minimum difference value (6 to 90) between the TE amplitude and the noise floor (NF) amplitude that the test must achieve for the highlighted frequency in the Frequency List. The program then ends the test.
	Noise field	The Noise amplitude field lets you enter a noise amplitude value (dB SPL) that the test must achieve or exceed (equal to or lower value) for the highlighted frequency in the Frequency List. The program then ends the test. If you prefer that the Noise floor amplitude is not a factor in the stopping criteria, set this value very low (for example, -20 dB) to negate its effect.
	Include checkbox	The Include checkbox lets you enable or disable the Stopping criteria settings for the highlighted frequency in the Frequency List. Click on this checkbox until a checkmark appears to include the response parameters for the highlighted frequency in the stopping rules. Click on this checkbox until no checkmark appears to exclude these response parameters.

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
OK command button	Select (click on) this command button to accept the values that currently appear in the fields (original or changed) and close the dialog box.
Cancel command button	Select (click on) this command button to close the dialog box without changing the original values in the fields.

To gain access to the TEOAE Collection Protocol Parameters setup dialog box:

1. Select Setup from the Main Menus.

   A drop-down list of items appears.
2. Select Select Protocol from the drop-down list.

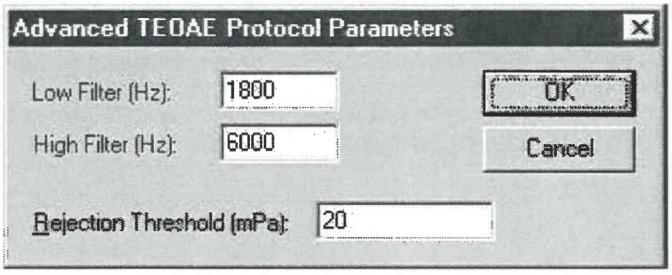
   A Select Protocol dialog box appears.
3. Select a TE protocol from the Select Protocol list.
4. Select the OK command button.

   This closes the Select Protocol dialog box.
5. Select Setup from the Main Menus.

   A drop-down list of items appears.
6. Select Collection Parameters from the drop down list.

Copyright © 2003-2004
Bio-Logic Systems Corp

TEOAE Advanced Parameters Setup



The illustration shows the Advanced TEOAE Protocol Parameters setup dialog box. The table lists and describes its components:

The Advanced TEOAE Protocol Parameters Setup dialog box

Component	Description
Low Filter (Hz) Field	The Low Filter field lets you enter a value that defines the low filter (that is, high pass) filter that applies to the TE response. The allowable entries are between 700 and 5000 Hz. Filtering that is too aggressive can reduce the amplitude of the TE response at frequencies at and below the low filter setting. Filtering that is too open lets the TE response include environmental, physiological, and system noise that can cause artifacts or produce low amplitude artifactual emissions.
High Filter (Hz) Field	The High Filter field lets you enter a value that defines the high filter (that is, low pass) filter applied to the TE response. The allowable entries are between 1000 and 10,000 Hz. Filtering that is too aggressive can reduce the amplitude of the TE response at frequencies at and above the high filter setting. Filtering that is too open lets the TE response include environmental, physiological, and system noise that can cause artifacts or produce high amplitude artifactual emissions.
Rejection Threshold (mPa) Field	The Rejection Threshold field lets you enter the default artifact rejection threshold value that the program uses to eliminate incoming data from the TE response. If the amplitude of the incoming response data is at or above the amplitude in this field, the program rejects the sample. If this setting is too strict, the program prolongs the test. If this setting is too lenient, the amount of noise in the TE response is high. This makes interpreting the data difficult and increases the chance of a refer result. Range: 0-200.
OK command button	Select (click on) this command button to accept the values that currently appear in the fields (original or changed) and close the dialog box.
Cancel command button	Select (click on) this command button to close the dialog box without changing the original values in the fields.

Copyright © 2003-2004
Bio-Logic Systems Corp

To gain access to the Advanced TEOAE Protocol Parameters setup dialog box:

1. Select Setup from the Main Menus.

   A drop-down list of items appears.

2. Select Select Protocol from the drop-down list.

   A Select Protocol dialog box appears.

3. Select a TE protocol from the Select Protocol list.
4. Select the OK command button.

   This closes the Select Protocol dialog box.

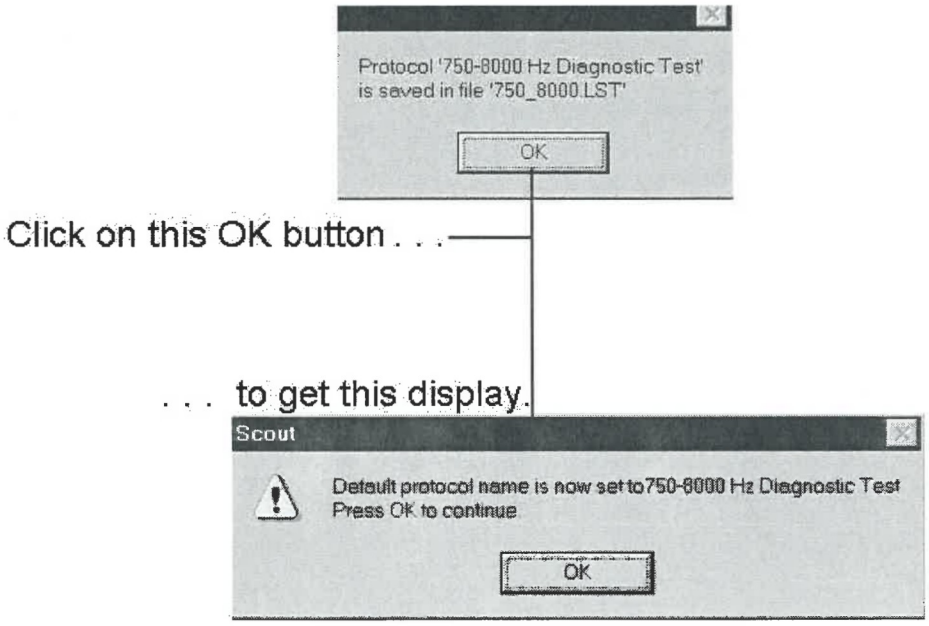
5. Select Setup from the Main Menus.

   A drop-down list of items appears.

6. Select Advanced Parameters from the drop-down list.

Copyright © 2003-2004
Bio-Logic Systems Corp

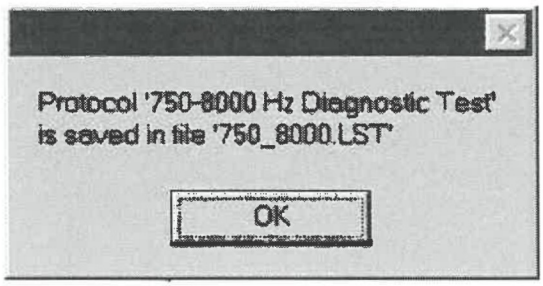
The Default Protocol item


Protocol '750-8000 Hz Diagnostic Test' is saved in file '750_8000.LST'
OK
Click on this OK button . . .
. . . to get this display.
Scout
Default protocol name is now set to750-8000 Hz Diagnostic Test
Press OK to continue
OK

When you select (click on) the Default Protocol item, the Scout program lets you save a favorite protocol as the program default. Once saved, the program automatically loads the protocol from memory to start a data collection.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Save Protocol item



When you select (click on) the Save Protocol item, the program lets you save either edited or new protocols to the Select Protocol menu list. For more information, turn to "How to use the Select Protocol menu item."

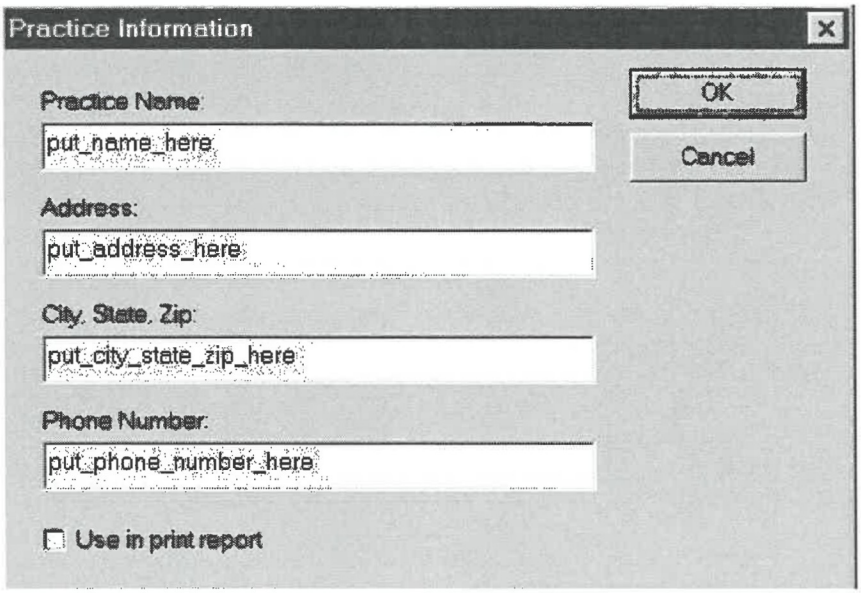
Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Practice Information item



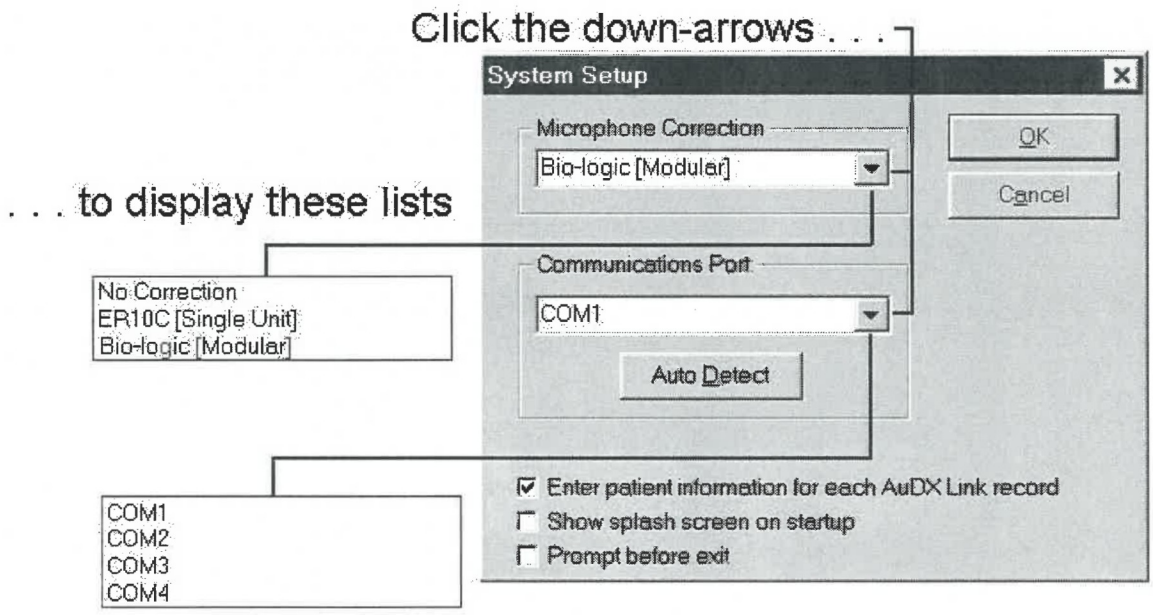
When you select (click on) the Practice Information item, the program displays a dialog box that lets you enter logistical information about the practice. This information can appear at the top of any report you print out. The illustration shows a typical Practice Information dialog box. The table lists and describes its components.

Practice Information dialog box

Component	Description
Practice Name field	Use this data entry field for the name of your practice.
Address field	Use this data entry field for the street address (street name or number, direction, apartment or suite number) of your practice.
City, state, Zip field	Use this data entry field for additional address information—such as City name, state or province name, and postal code—for your practice.
Phone Number field	Use this data entry field for the area code and phone number of your practice.
Use in print report checkbox	Select (click on) this checkbox until a checkmark appears to include the information in this dialog box on the top of the printed report. Select (click on) this checkbox until no checkmark appears to exclude the information in this dialog box from the printed report.
OK command button	Select (click on) this command button to close this dialog box and accept the information and settings you have entered.
Cancel command button	Select (click on) this command button to close this dialog box without accepting any changes to its information or settings.

Copyright © 2003-2004
Bio-Logic Systems Corp

The System (setup) item



When you select (click on) the System (setup) item, the program displays a System Setup dialog box that lets you configure settings for Scout system peripherals. The illustration shows the System Setup dialog box. The table lists and describes its components.

System Setup dialog box

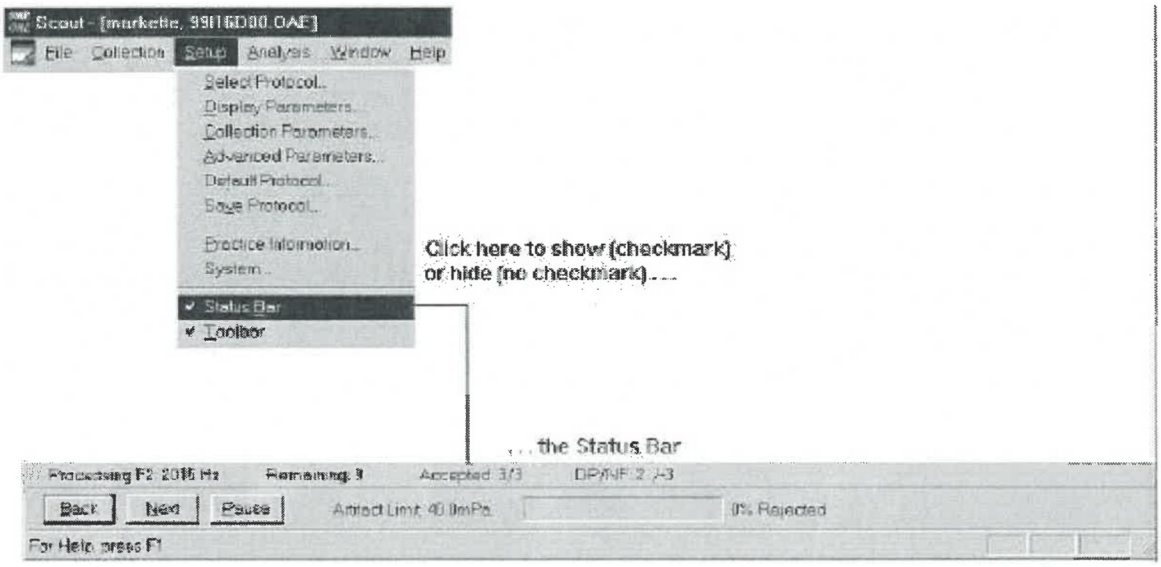
Component	Description
Microphone Correction field	This field holds a drop-down list of correction algorithms that you can apply to the data gathered by your system's microphone. Current options include: No Correction ER10C (Single Unit) Bio-logic (Modular)
Communications Port field	This field holds a list of the communications ports that may be available on your computer. Select the port you want to use for your microphone from this list. You can also use the Auto Detect command button to have the Scout program automatically detect the port you are using.
Auto Detect command button	Select (click on) this command button to have the Scout program automatically detect the serial port you are using for your system. **NOTE: You must have hardware connected to the serial port for this command to work. Otherwise, and Error message displays.**

Copyright © 2003-2004
Bio-Logic Systems Corp

Component	Description
Edit patient information for each AuDX link record checkbox	This checkbox is active only for systems that have an AuDX testing device attached to them. Click on this box to "toggle" it between checked and unchecked. Check this box to have the Scout program let you edit the test files you import from the AuDX device. Leave the box blank (unchecked) to import the files without entering patient information for each AuDX test.
Show splash screen on startup checkbox	Click on this box to "toggle" it between checked and unchecked. Check this box to have the Scout program show a "splash screen" (that is, a title screen) each time you start it. Leave the box blank (unchecked) to start the Scout program without displaying the "splash screen."
Prompt before exit checkbox	Click on this box to "toggle" it between checked and unchecked. Check this box to have the Scout program display an "Are you sure . . " prompt before you exit the program. Leave the box blank (unchecked) to exit the Scout program without displaying the prompt.
OK command button	Click on this command button to accept any changes you have made to this display.
Cancel command button	Click on this command button to close the display without making any changes.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Status Bar item



This menu item lets you show (checkmark visible) or hide (checkmark not visible) the Status Bar at the bottom of the Scout display screen. The Status Bar itself displays useful information during Data Collection. The illustration shows a typical Status Bar and typical collection information. The table lists and describes the components.

The DPOAE Status Bar	
Component	**Description**
Processing F2 (frequency field)	This field shows which frequency of the protocol Scout is currently testing. The number changes frequently during collection. In the illustrated example, Scout is testing 2015 Hz.
Remaining field	This field shows how many averages remain before the system "times out" on the frequency it is testing (see Processing F2). In the illustrated example, nine averages remain before time out.
Accepted field	This field shows the number of averages Scout has taken versus the total number of possible averages. In the illustrated example, Scout has taken and accepted 3 averages.
DP/NF field	This field shows the values for the DP and the NF amplitudes. It updates with each average the system takes (see Accepted field). In the illustrated example, the DP amplitude is 2, the NF amplitude is -3.

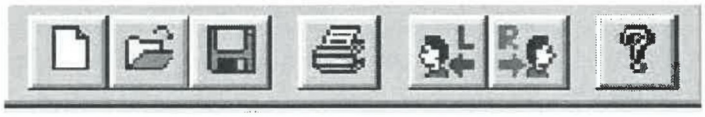
Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Status Bar (continued)	
Component	**Description**
Artifact Limit field	This field shows the current Artifact Limit. In the illustrated example, this limit is 40.0 mPa.
% Rejected	This shows the percentage of averages the Scout system has rejected in the test. In the illustrated example, this percentage is 0.

The TEOAE Status Bar	
Component	**Description**
Test Status Bar	The TEOAE test status bar shows the artifact rejection threshold value. During the test, an artifact rejection bar shows you the amount of artifact by filling in with blue blocks of color. The percent of artifact occurring during an average also displays as a percent value. To change the artifact rejection threshold value during the test, use the up and down arrow keys or the page up and page down keys on the keyboard. You can use the End key as a quick way to achieve averaging when unrelenting artifacts are occurring. However, using the End key allows high amplitude noise into the TE response and compromises the quality of the data.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Toolbar and its icons



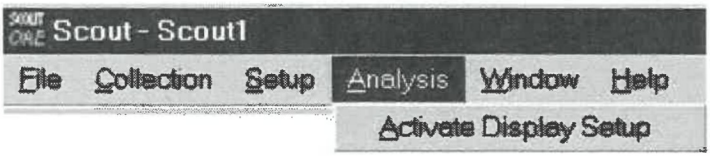
This menu item lets you show (checkmark visible) or hide (checkmark not visible) the Scout Toolbar. The illustration shows the Scout Toolbar. The table lists and describes its icons

Toolbar icons

Icon	Description
	This icon works the same as the New Patient File item in the File menu. Select (click on) this icon to create a new patient record with the Scout system. For more information, turn to The New Patient File item.
	This icon works the same as the Open Patient File item in the File menu. Select (click on) this icon to launch and Open Patient Data File display. You can then use that display to open an exiting patient record with the Scout system. For more information, turn to The Open Patient File item.
	This icon works the same as the Save Test Data item in the File menu. Select (click on) this icon to save the data that the Scout gathers after testing a patient. For more information about the Save command, see the Microsoft Corporation's Windows Operating System documentation.
	This icon works the same as the Print item in the File menu. The Print command is a standard Windows command. When you select it, the program displays a "Print" dialog box. For more information about the Print command and the "Print" dialog box, see the Microsoft Corporation's Windows Operating System documentation.
	Select (click on) this icon to start a Scout test for the patient's left ear.
	Select (click on) this icon to start a Scout test for the patient's right ear.
	Click on this button to display a question mark (?) that moves with movement of the mouse. Position the question mark over any screen item and click the left mouse button to display "context sensitive" help information about the item.

Copyright © 2003-2004
Bio-Logic Systems Corp

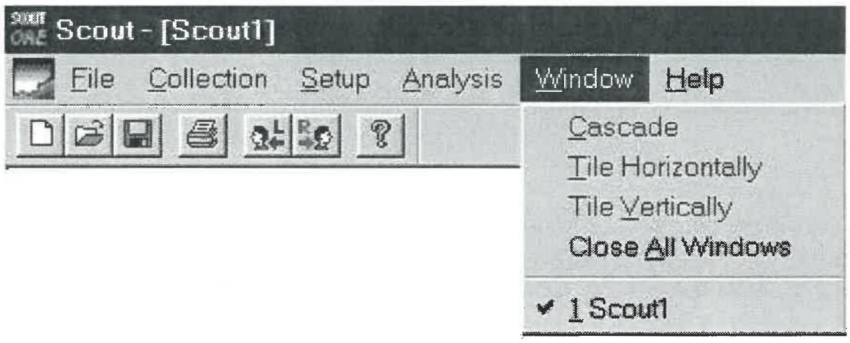
The Analysis menu



The Analysis menu is the fourth of the Main Menus. It lets you change the display parameters of the current window quickly. This feature only affects the display parameters of the currently active data window. If multiple data windows are on the screen, the remaining windows are not affected. For more information, turn to How to Analyze collected data.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Window menu



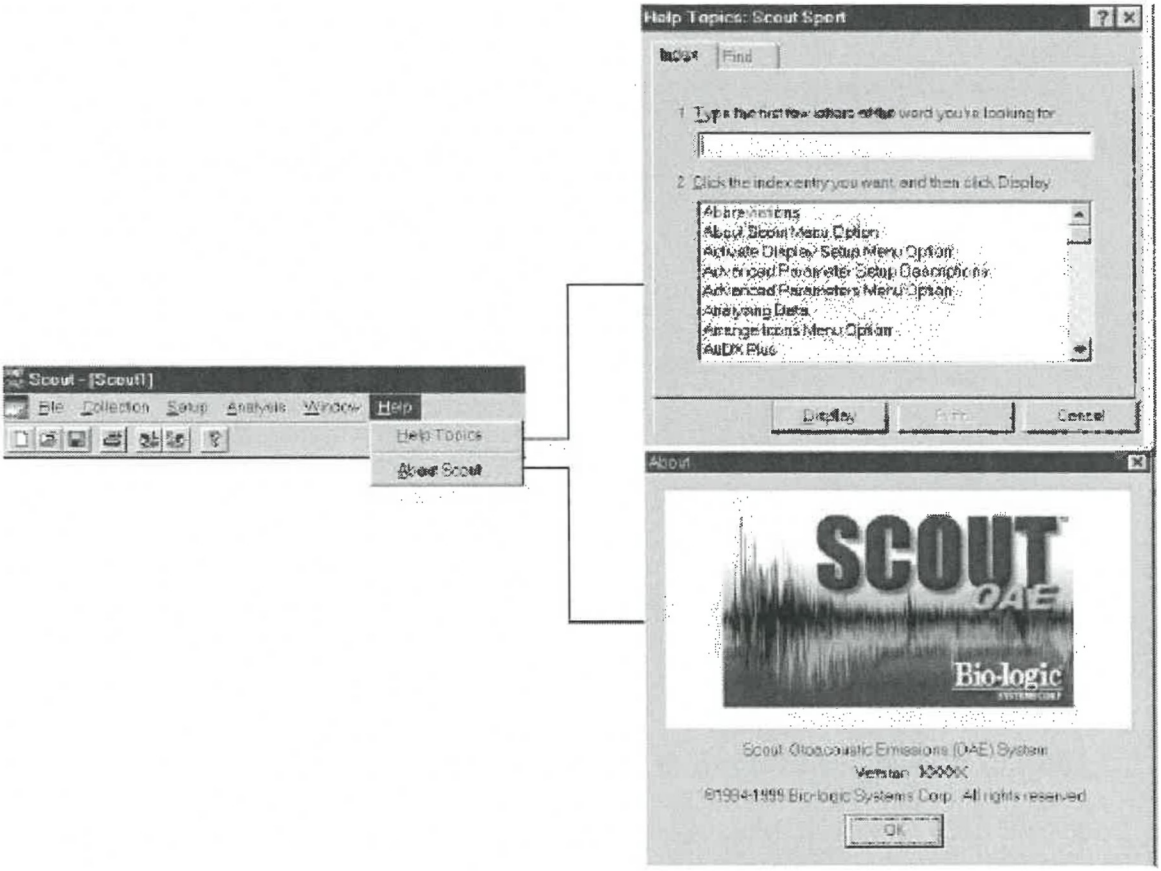
The Window menu is the fifth of the Main Menus. Clicking on the Window menu produces a drop-down list of standard Windows commands and an "Open Windows" list. The illustration shows a typical Window menu. The table lists and describes the items in that menu

The Window Menu

Menu item or command	Description
Standard Windows commands	The standard commands include: —Cascade —Tile —Close For information about these commands, see the Microsoft Corporation's Windows Operating System documentation.
Open Windows list	This area of the drop-down Windows menu lists the files that the program currently has open. Click on those files to "toggle" them to the computer's display.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Help menu



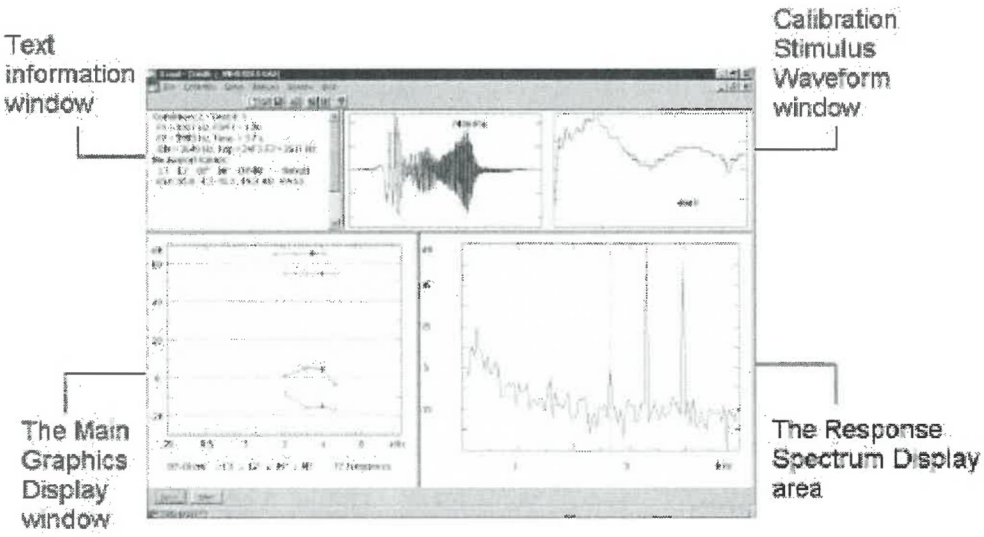
The Help menu is the sixth of the Main Menu Items. Clicking on the Help menu produces a drop-down list of menu items. The illustration above shows a typical Help menu. The table below lists and describes the items in that menu.

The Help Menu

Menu item	Description
About Scout	Click on the About Scout item to get version numbers, copyright, and other useful information about the Scout DPOAE program.
Help Topics	Click on the Help Topics item to launch an On-Line Help file that contains information about specific topics within the Scout program.

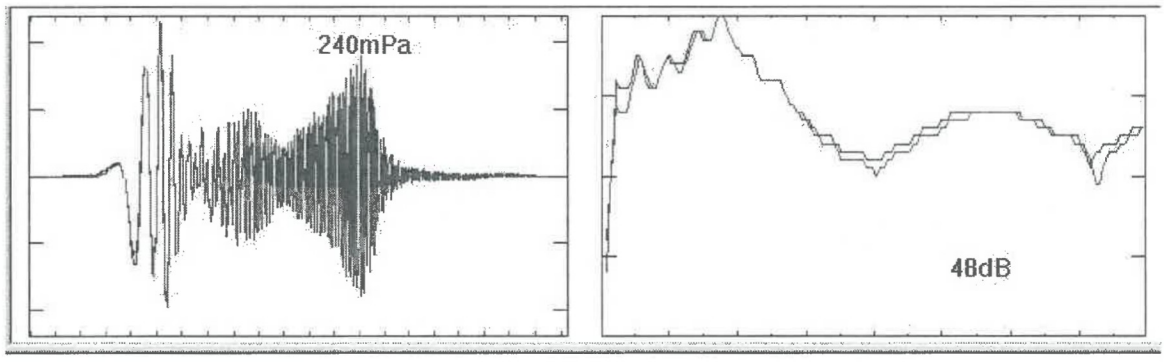
Copyright © 2003-2004
Bio-Logic Systems Corp

Display Screen Layouts


Text information window
Calibration Stimulus Waveform window
The Main Graphics Display window
The Response Spectrum Display area

The Scout Sport program screen has multiple windows for displaying various types of information at the same time. Descriptions of these windows follow.

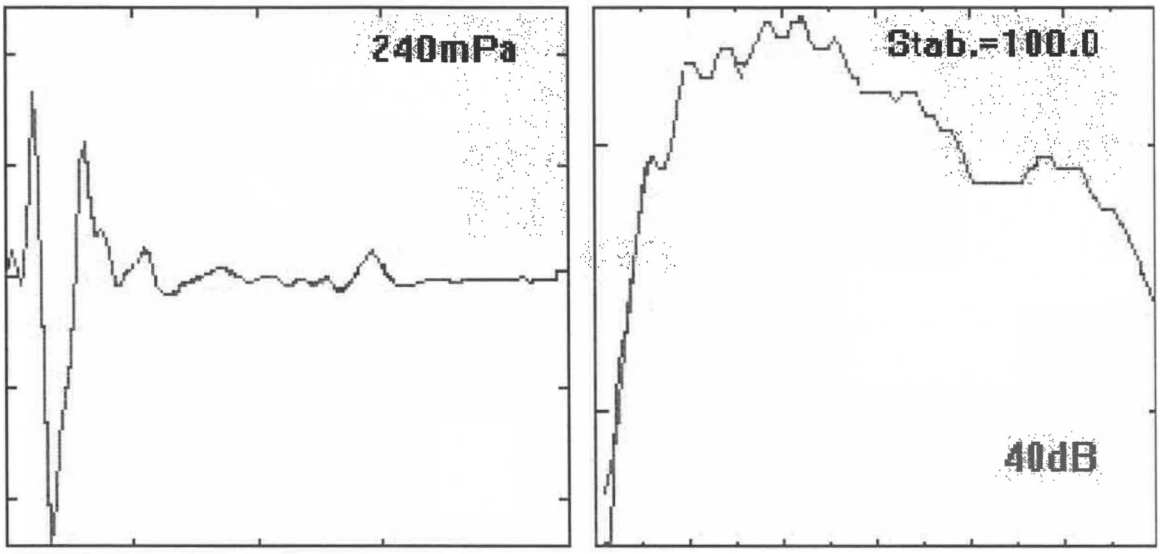
The DPOAE Calibration Stimulus Waveform Window



This window appears in the upper, right side of the program screen. It provides a graphic display of the temporal waveform that the program creates in the main display window during the Calibration phase of DPOAE testing. When calibration is complete, the program automatically transfers the waveform from the main display window to the Calibration Stimulus Waveform window. There, it remains unchanged unless users perform a new calibration.

Copyright © 2003-2004
Bio-Logic Systems Corp

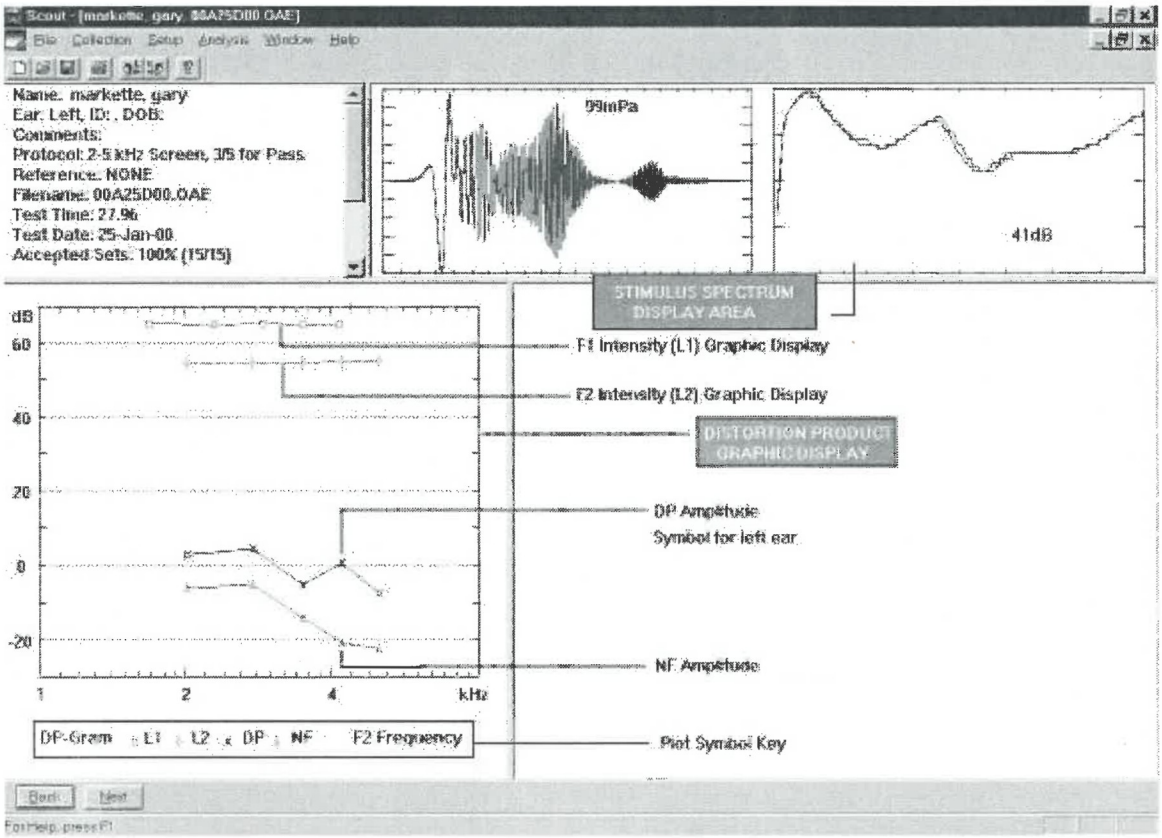
The TEOAE Calibration Stimulus Waveform Window



The calibration display area shows the data achieved during the calibration phase of the TE test. Both the temporal waveform and the spectrum of the calibration appear. During the TE test, a value that shows the stability of the stimulus spectrum in the ear canal updates regularly in the upper right corner of the calibration spectrum area. The program regularly superimposes the pre-test calibration waveform and spectrum with a current stimulus waveform and spectrum on the display so that the user can monitor for changes. The stability value reflects these changes. For example, a stability value of 100% means that the stimulus spectrum that occurred during the current average is identical to the stimulus spectrum that occurred during the pre-test calibration phase.

Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Distortion Product (DP) Graphic Display



This graphic display appears in the main display window of the Scout program screen. It plots the otoacoustic emissions that occur in the patient's ear canal in response to each stimulus condition. In this display, the program uses symbols for plotting DP amplitude measurements. Red circles represent plotted DP amplitude measurements for the right ear. Blue Xs represent plotted DP amplitude measurements for the left ear. The program automatically connects the plotted measurements for the right ear with a red line and the plotted measurements for the left ear with a blue line.

The DPOAE F1 Intensity (L1) Graphic Display

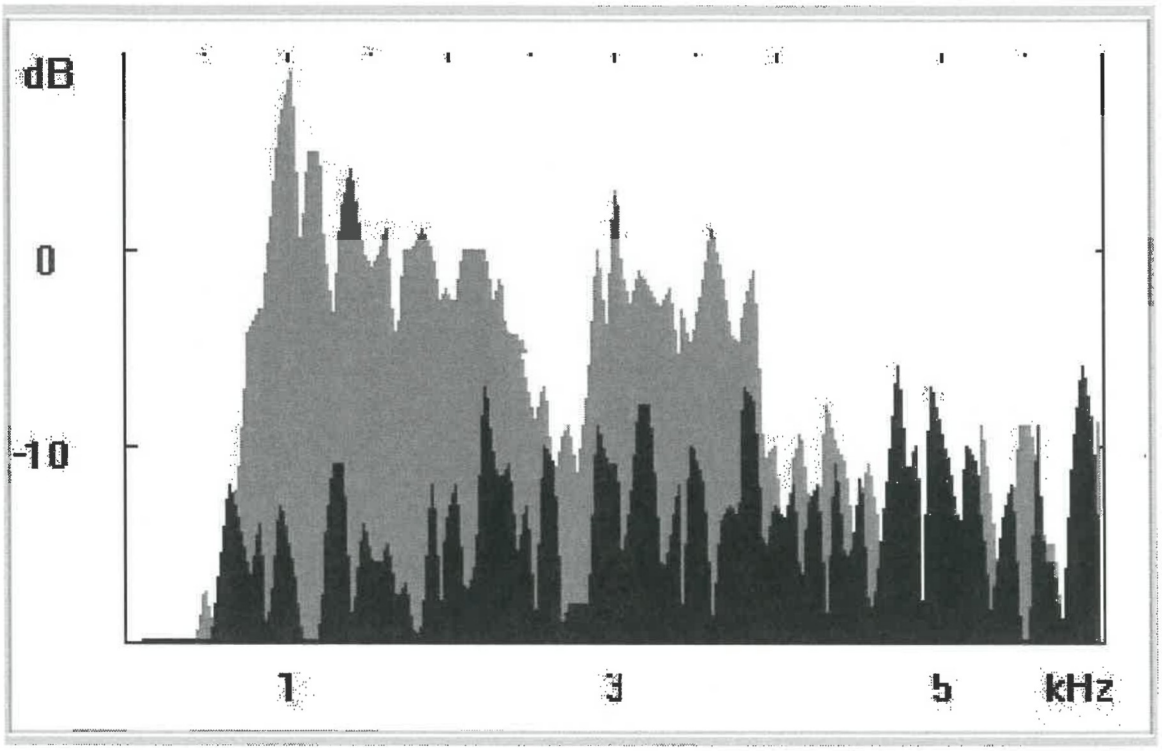
This graphic display normally appears near the top of the main display window. It shows the measured intensity level of the lower frequency stimulus (F1). The scout program measures this level in decibels and plots it after the test completes each frequency condition.

The DPOAE F2 Intensity (L2) Graphic Display

This graphic display normally appears near the top of the main display window. It shows the measured intensity level of the higher frequency stimulus (F2). The scout program measures this level in decibels and plots it after the test completes each frequency condition.

Copyright © 2003-2004
Bio-Logic Systems Corp

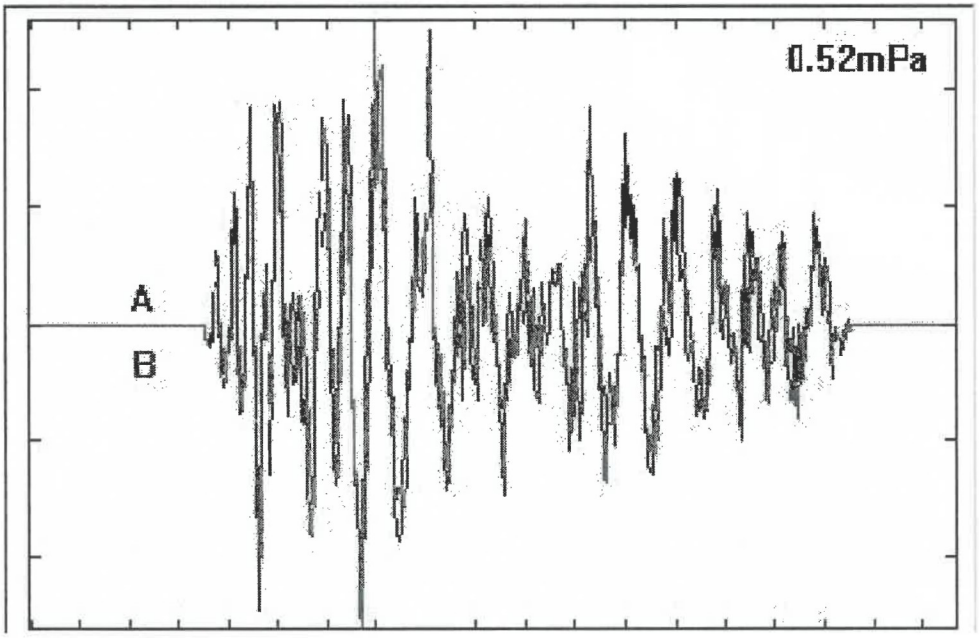
The TEOAE Response Spectrum Display Area



The TE response spectrum shows a frequency vs. amplitude graph of the TE response. The TE response displays in red when you perform a right ear test and blue when you perform a left ear test. The noise floor appears superimposed on the TE response. Noise amplitude appears in dark green.

Copyright © 2003-2004
Bio-Logic Systems Corp

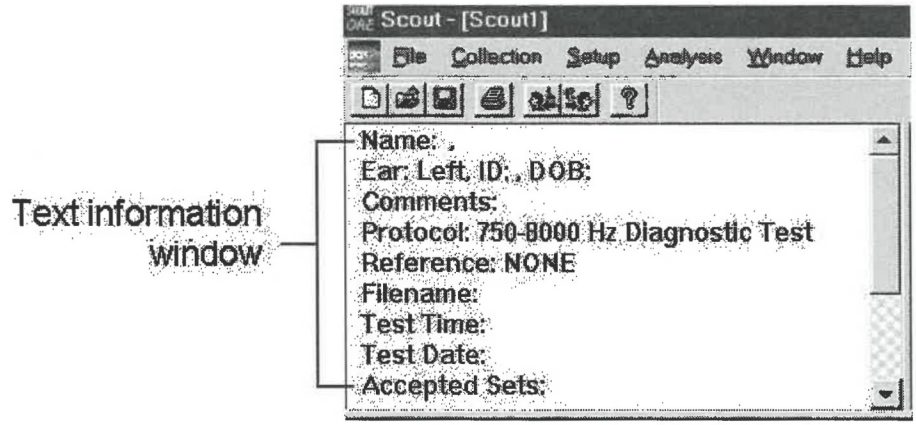
The TEOAE Response Temporal Waveform Display Area



The TE response temporal waveform displays two superimposed waveforms that represent two alternately collected response buffers. The tick marks at the bottom of the display each represent one millisecond of duration. How well these two response buffers match in a particular frequency band determines the reproducibility response parameter.

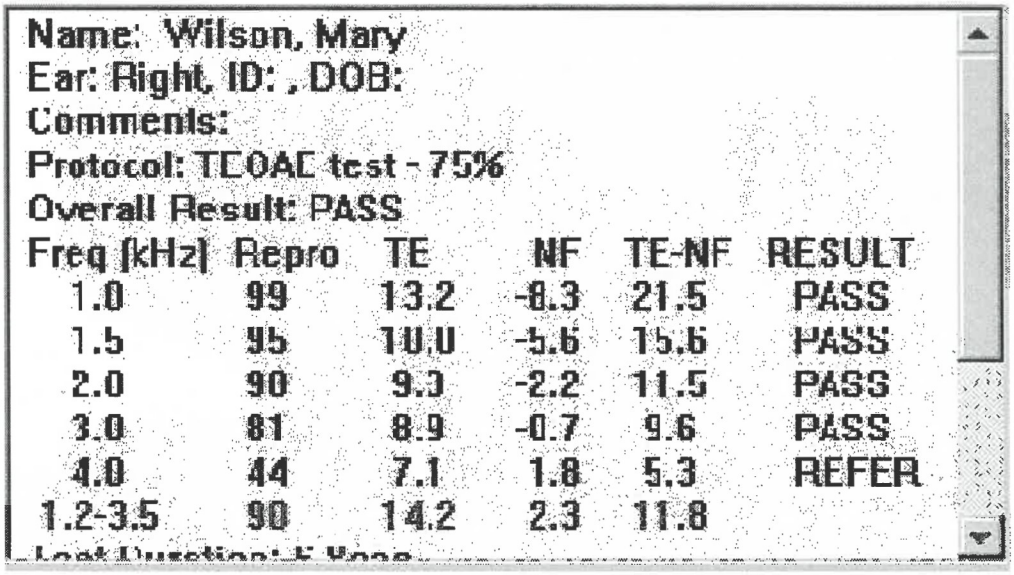
Copyright © 2003-2004
Bio-Logic Systems Corp

DPOAE Text Information Window



This window is in the upper, left corner of an open data file window. It displays information about the displayed data, the last completed frequency condition (during data collection), or the numeric data for a selected data point (during data analysis).

TEOAE Text Information Window

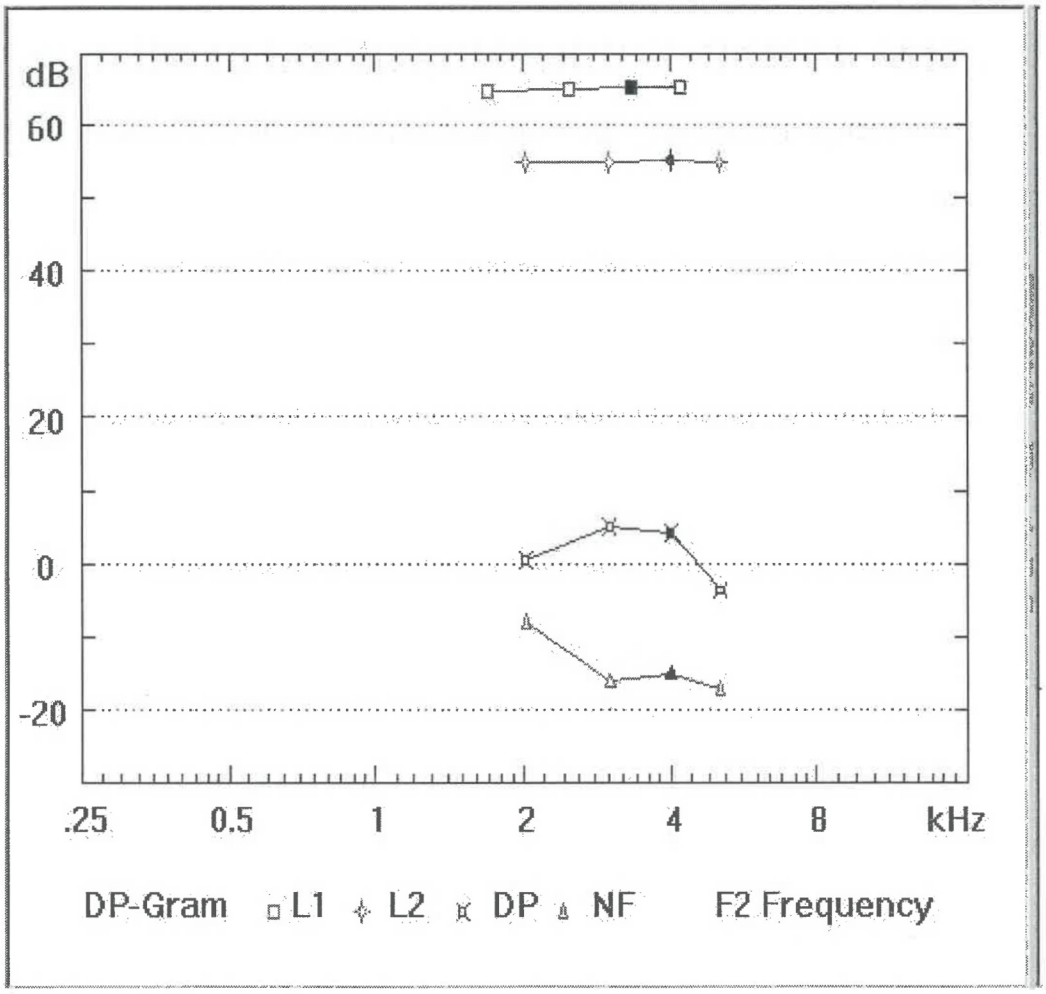

Name: Wilson, Mary
Ear: Right, ID: , DOB:
Comments:
Protocol: TEOAE test - 75%
Overall Result: PASS
Freq [kHz] Repro TE NF TE-NF RESULT
1.0 99 13.2 -8.3 21.5 PASS
1.5 95 10.0 -5.6 15.6 PASS
2.0 90 9.3 -2.2 11.5 PASS
3.0 81 8.9 -0.7 9.6 PASS
4.0 44 7.1 1.8 5.3 REFER
1.2-3.5 90 14.2 2.3 11.8

The test information text area displays the patient information that you entered when you initiated the test. During the TE measurement phase it periodically updates a table of measured values for each of six frequency bands. The first five frequency bands are one-half octave bands centered at the displayed frequencies (1000, 1500, 2000, 3000 and 4000 Hz). The last frequency band is a broader band including frequencies from 1.2 to 3.5 kHz). The measured values for these bands include the TE amplitude, the NF amplitude, the difference value between the TE amplitude, and the noise floor (NF). An Overall Result pass or refer indication as well as a per frequency pass or refer recommendation may appear in the result column of the table. These indications depend on the Pass/Refer Criteria that you defined as part of the test

Copyright © 2003-2004
Bio-Logic Systems Corp

protocol. The test information text area also displays the name of the test protocol that you used to collect the data and the duration of the test.

The Main Graphics Display Window



This window area appears on the lower, left side of the program screen and usually occupies the largest portion of the screen. It displays either the temporal waveform(s) during the calibration test phase or the DP-Gram or TE response during the test phase.

Note: Users can resize this or any of the other screen display windows as follows:

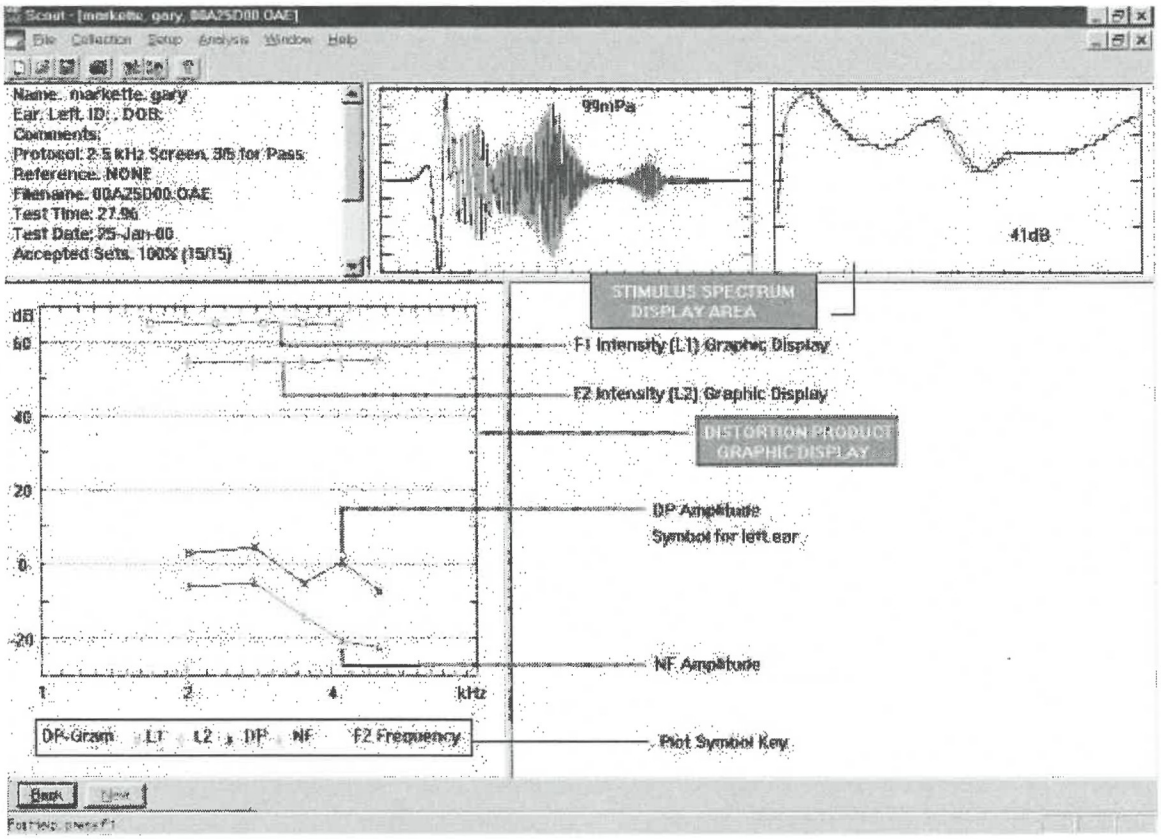
1. Position the mouse cursor on the window's boundary line until the cursor changes to a double arrow.

2. Hold down the left mouse button and drag the cursor to the size you want for the window.

3. Release the left mouse button.

Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Noise Floor (NF) Graphic Display



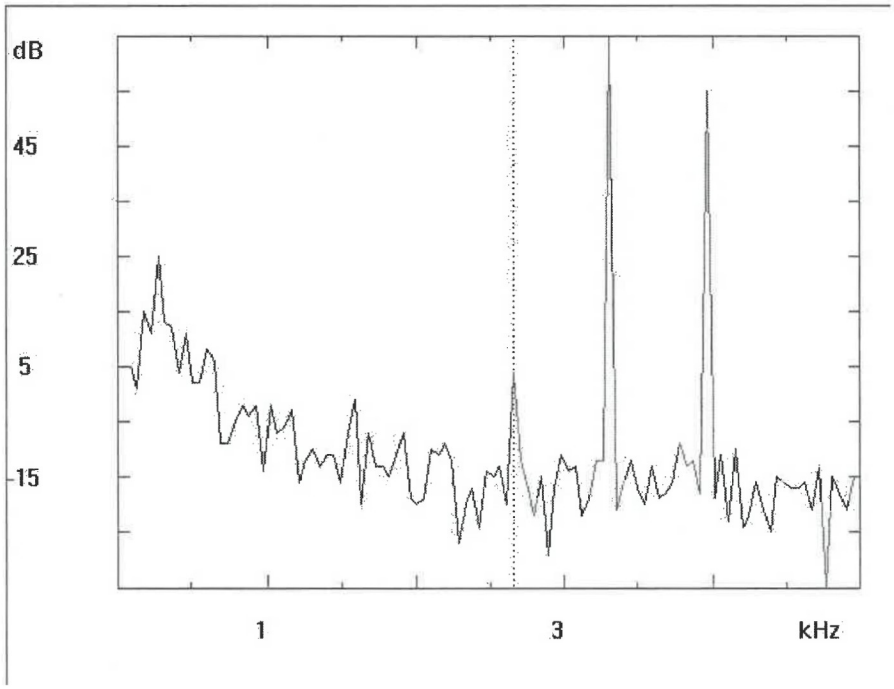
This graphic display appears in the main display window. It shows the measured noise floor amplitude (dB) of each measured stimulus condition during the DPOAE test phase. Green triangles represent plotted Noise Floor measurements in the graphic display. The program automatically connects the plotted measurements with a green line.

The Plot Symbol Key

This key appears near the bottom, left side of the program screen. It shows the symbols used in the DP-Gram for the F1 Intensity (L1), the F2 Intensity (L2), the Distortion Product (DP) and the Noise Floor (NF).

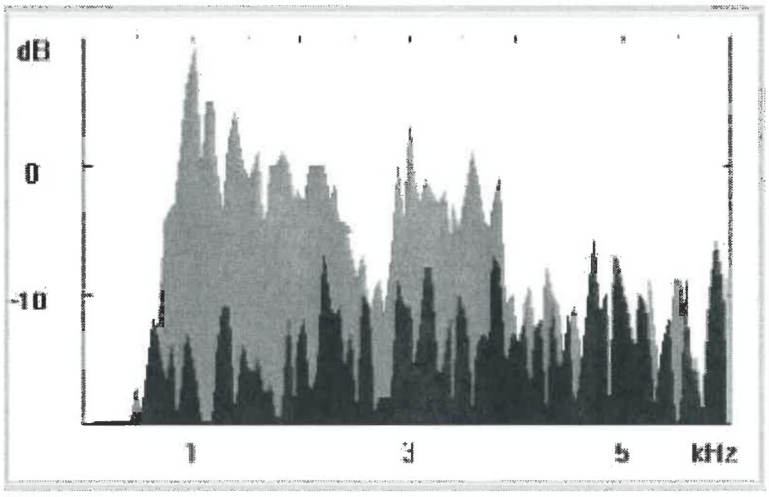
Copyright © 2003-2004
Bio-Logic Systems Corp

The DPOAE Response Spectrum Display Area



This display area appears on the right side of the program screen. It shows spectral information during the calibration test phase or response spectrum raw data during the DPOAE test phase or during analysis when you select a datapoint on the DPgram.

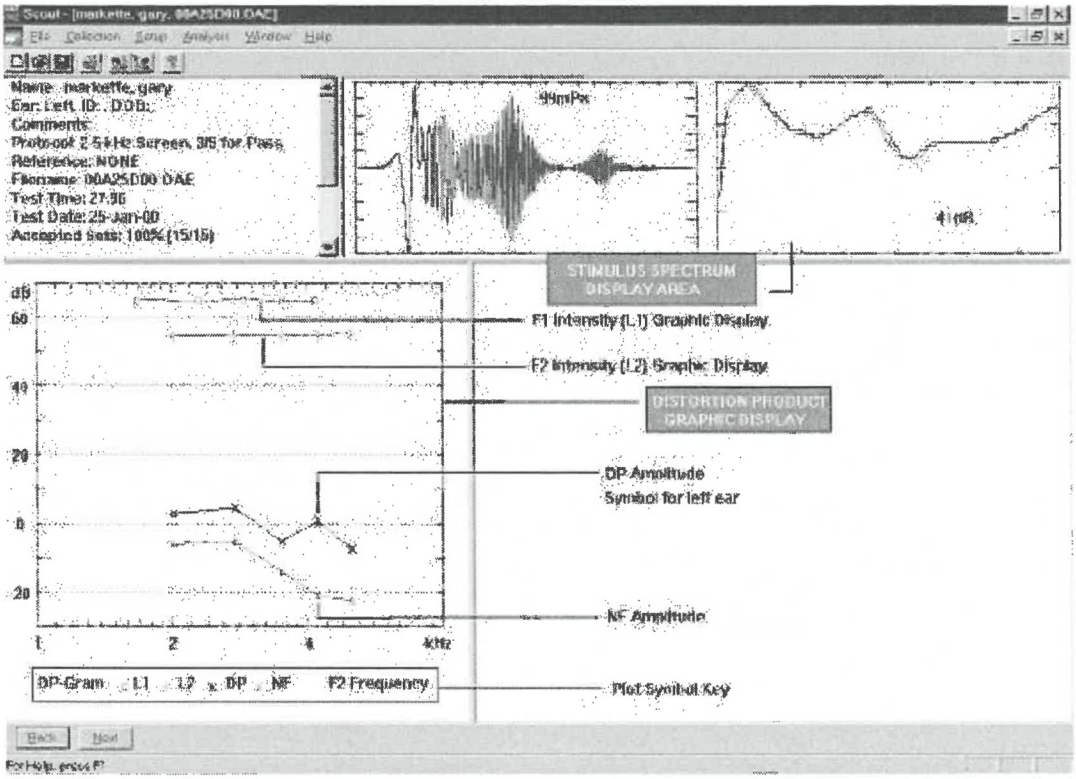
The TEOAE Response Spectrum Display Area



The TE response spectrum shows a frequency vs. amplitude graph of the TE response. The TE response displays in red when you perform a right ear test and blue when you perform a left ear test. The noise floor appears superimposed on the TE response. Noise amplitude appears in dark green.

Copyright © 2003-2004
Bio-Logic Systems Corp

The status Information area



This display area appears at the bottom of the program screen during the DPOAE test phase and tracks the progress of a DPOAE test during the measurement phase.

The Stimulus Spectrum Display Area

This display area appears in the upper, left section of the program screen to the right of the calibration stimulus waveform. It displays the spectra of the ear canal's response to a broad frequency stimulus that is emitted by each loudspeaker during the calibration phase.

The DP Amplitude Reference Set

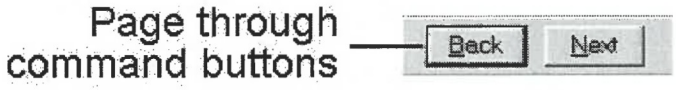
This graphic display appears in the DP-Gram and shows the DP amplitude range associated with the user specified data reference set.

The NF Amplitude

This graphic display appears in the DP-Gram and shows the NF amplitude range associated with the user specified data reference set.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Page Through command buttons

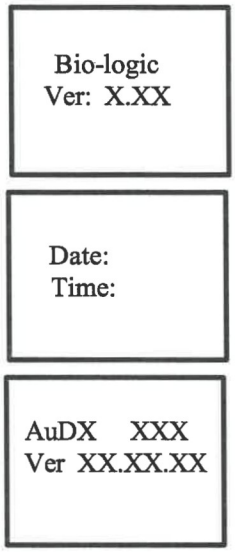


These command buttons appear at the bottom of the Scout display screen. They let users move through tests that have several conditions.

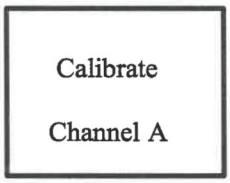
Copyright © 2003-2004
Bio-Logic Systems Corp

LCD Messages

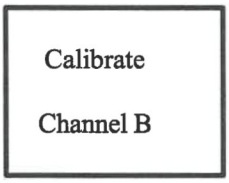
The LCD screen on the Scout Sport and AuDX PLUS box automatically displays a message indicating which stage the program is in. This section lists these messages in the same sequence they appear on the LCD Screen.



These messages appear on the LCD screen when the users reset the box.

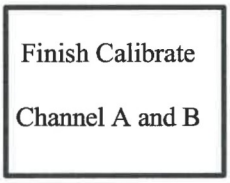


This message appears on the LCD screen at the start of a Channel A calibration.

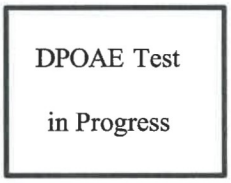


This message appears on the LCD screen at the start of a Channel B calibration for DPOAE tests only.

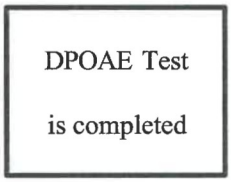
Copyright © 2003-2004
Bio-Logic Systems Corp



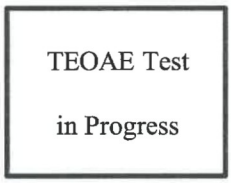
This message appears on the LCD screen at the start of Channel A and Channel B calibration.



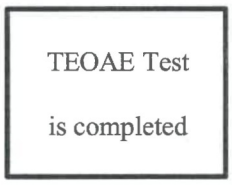
This message appears on the LCD screen at the start of the DPOAE test.



This message appears on the LCD screen at the end of the DPOAE test.



This message appears on the LCD screen at the start of the TEOAE test.



This message appears on the LCD screen at the end of the TEOAE test.

Copyright © 2003-2004
Bio-Logic Systems Corp

DESCRIPTIONS: REFERENCE DATA FILE FORMATS

DPOAE Reference data file formats

Bio-logic includes four reference data files with the program software. Users can display these reference lines on any DP-Gram that has a test protocol with the same measured L1 level and L2 levels (+/- 3 dB) of the selected reference set. Users can also create new reference files by using the ASCII file format descriptions below to edit editing existing files (such as VANDERBI.REF or VANDEB00.REF from the C:\PROGRAM FILES\SCOUT directory).

Note: The boundary lines will not appear if probe slippage or faulty calibration prevents the program from achieving the designated L1 or L2 values for the first test frequency.

Reference Data File Format Descriptions

Line 1	;REFVER=**1.0**	This entry is for the Scout program. Do not edit.
Line 2	;Name = **Vanderbilt U. 65/55, 2 St. Dev.**	This entry determines which filename appears in the list of reference data files in the Reference Data menu option.
Line 3	;Type = **DP-Gram**	This entry is for future development of the Scout Sport. Do not edit at this time.
Line 4	;Ratio = **1.22**	This entry defines the F2/F1 ratio used in the reference data collection.
Line 5	;L1 range =**62.0 68.0**	This entry defines the acceptable range of L1 values. The Scout program displays no reference data on the screen if the first L1 value is outside the entered range.
Line 6	;L2 range = **52.0 58.0**	This entry defines the acceptable range of L2 values. The Scout program displays no reference data on the screen if the first L2 value is outside the entered range.
Line 7	;DP deviation = **2.0**	This entry defines the range the Scout system uses determine the boundaries it displays for the DP reference data. A value of 0.0 creates a single line defining the mean DP.
Line 8	;NF deviation = **0.0**	This entry defines the range the Scout system uses determine the boundaries it displays for the NF reference data. A value of 0.0 creates a single line defining the mean NF.

Copyright © 2003-2004
Bio-Logic Systems Corp

The Vanderbilt 65/55, 95-5th Percentile Reference Set

The Vanderbilt 65/55, 95-5th Percentile Reference Data Set was collected using the Bio-logic Scout system. Subjects were young, audiometrically normal adults. The test defined "normal" as hearing threshold levels of 15 dB HL or better from 250 to 8000 Hz and type A tympanograms. Testing took place in a quiet, non-sound treated room. The DPOAE test protocol parameters included: F2/F1 ratio = 1.2, L1 = 65 dB SPL, L2 = 55 dB SPL, 2048 buffer size, 25 sweeps per set. The boundaries of the display are the 95th to the 5th percentile of DP amplitudes. The noise floor display is the 95th percentile.

Vanderbilt 65/55, 95-5th Percentile Reference Set Table

F2 Frequency	DP 95th Percentile	DP 5th Percentile	NF 95th Percentile
634 DP	11.16	7.34	-3.50
805 DP	11.05	6.96	-4.67
1001 DP	12.28	8.09	-8.81
1586 DP	12.76	8.53	-14.03
2002 DP	8.90	4.81	-17.46
3174 DP	7.75	4.44	-19.23
4003 DP	7.91	4.28	-22.39
6347 DP	3.95	-1.50	-23.19

DP = amplitude of the distortion product otoacoustic emission in dB SPL

NF = amplitude of the noise floor in dB SPL

NF = amplitude of the noise floor in dB SPL

Copyright © 2003-2004
Bio-Logic Systems Corp

The Vanderbilt 65/65, 95-5th Percentile Reference Set

The Vanderbilt 65/65, 95-5th Percentile Reference Data Set was collected using the Bio-logic Scout system. Subjects were young, audiometrically normal adults. The test defined "normal" as hearing threshold levels of 15 dB HL or better from 250 to 8000 Hz and type A tympanograms. Testing took place in a quiet, non-sound treated room. The DPOAE test protocol parameters included: F2/F1 ratio = 1.2, L1 = 65 dB SPL, L2 = 65 dB SPL, 2048 buffer size, 25 sweeps per set. The boundaries of the display are the 95th to the 5th percentile of DP amplitudes. The noise floor display is the 95th percentile.

Vanderbilt 65/65, 95-5th Percentile Reference Set Table

F2 Frequency	DP 95th Percentile	DP 5th Percentile	NF 95th Percentile
634 DP	10.26	6.84	-2.30
805 DP	9.81	6.53	-5.47
1001 DP	9.88	5.26	-8.92
1586 DP	10.33	5.20	-15.08
2002 DP	7.58	3.20	-16.85
3174 DP	5.56	1.92	-20.54
4003 DP	7.67	4.29	-23.26
6347 DP	4.95	-1.30	-20.85

DP = amplitude of the distortion product otoacoustic emission in dB SPL

NF = amplitude of the noise floor in dB SPL

Copyright © 2003-2004
Bio-Logic Systems Corp

The Vanderbilt 65/55, 2 St. Dev. Reference Set

The Vanderbilt 65/55, 2 St. Dev. Reference Data Set was collected using the Bio-logic Scout system. Subjects were young, audiometrically normal adults. The test defined "normal" as hearing threshold levels of 15 dB HL or better from 250 to 8000 Hz and type A tympanograms. Testing took place in a quiet, non-sound treated room. The DPOAE test protocol parameters included: F2/F1 ratio= 1.2, L1=65 dB SPL, L2=55 dB SPL, 2048 buffer size, 25 sweeps per set.

Vanderbilt 65/55, 2 St. Dev. Reference Set Table

F2 Frequency	Mean	SD
634 DP	9.25	5.97
NF	5.63	6.68
805 DP	9.01	6.39
NF	-7.43	8.65
1001 DP	10.18	6.56
NF	-11.28	7.72
1586 DP	10.65	6.63
NF	-16.65	7.56
2002 DP	6.85	6.40
NF	-19.41	6.07
3174 DP	6.1	5.18
NF	21.16	6.04
4003 DP	6.1	5.68
NF	-24.65	7.08
6347 DP	1.22	8.51
NF	-25.24	6.38

DP = amplitude of the distortion product otoacoustic emission in dB SPL

NF = amplitude of the noise floor in dB SPL

Copyright © 2003-2004
Bio-Logic Systems Corp

The Vanderbilt 65/65, 2 St. Dev. Reference Set

The Vanderbilt 65/65, 2 St. Dev. Reference Data Set was collected using the Bio-logic Scout system. Subjects were young, audiometrically normal adults. The test defined "normal" as hearing threshold levels of 15 dB HL or better from 250 to 8000 Hz and type A tympanograms. Testing took place in a quiet, non-sound treated room. The DPOAE test protocol parameters included: F2/F1 ratio = 1.2, L1 = 65 dB SPL, L2 = 65 dB SPL, 2048 buffer size, 25 sweeps per set.

Vanderbilt 65/55, 2 St. Dev. Reference Set Table

F2 Frequency	Mean	SD
634 DP	8.55	5.35
NF	-5.66	10.5
805 DP	8.17	5.13
NF	-8.18	8.48
1001 DP	7.57	7.22
NF	-11.71	8.72
1586 DP	7.76	8.03
NF	-16.96	5.86
2002 DP	5.39	6.84
NF	-18.92	6.45
3174 DP	3.74	5.69
NF	-22.84	7.20
4003 DP	5.98	5.28
NF	-25.70	7.62
6347 DP	1.82	9.78
NF	-23.62	8.67

DP = amplitude of the distortion product otoacoustic emission in dB SPL

NF = amplitude of the noise floor in dB SPL

Copyright © 2003-2004
Bio-Logic Systems Corp

The Boys Town 65-55 Reference Set

Research published by Gorga, Stover, and Neely forms the basis for this DP reference data set option. The option defines hearing loss as pure tone thresholds of 25 dB HL or greater. This study collected data using stimulus intensity levels of 65/55 dB for each frequency condition. The F2/F1 ratio was 1.2. Subjects ranged in age from 1.3 years to 96.5 years of age. The study excluded subjects with evidence of middle ear disorders.

The upper blue line delimits the 95th percentile from the distribution of DP responses in ears with hearing loss. The lower green line delimits the 5th percentile from the normal distribution of responses. Therefore, DP responses at amplitudes above the blue line probably come from ears with normal cochlear function. DP responses at amplitudes falling below the green line probably come from ears that have cochlear damage if the middle ear is normal.

The area between the blue and green lines represents the overlap between the normal and hearing impaired populations. DP responses in this area are more difficult to categorize. According to Gorga, Stover, and Neely, the overlapping area between normal and impaired distribution leans toward ears with a mild hearing loss if hearing loss exists. The difference value between the DP and NF amplitudes is also an important consideration when interpreting data. If necessary, refer to the published article for a full discussion of the findings pertaining to this display option.

Boys Town 65-55 Reference Set

F2 Frequency	Hearing Impaired 95th Percentile	Normal Hearing 5th Percentile
500	-2 dB SPL	-19 dB SPL
707	-7 dB SPL	-12 dB SPL
1000	2 dB SPL	-10 dB SPL
1414	0 dB SPL	-4 dB SPL
2000	-4 dB SPL	-14 dB SPL
2828	-3 dB SPL	-13 dB SPL
4000	-5 dB SPL	-18 dB SPL
5656	2 dB SPL	-19 dB SPL
8000	-7 dB SPL	-23 dB SPL

Copyright © 2003-2004
Bio-Logic Systems Corp

The Expanded Boys Town Reference Data Set

This reference set represents the results of an expanded study using a larger data sample and the same conditions as those in the Boys Town 65-55 Reference Set. For details, turn to the previous section of this document.

In the Scout Display, the two blue lines represent the 95th and 90th percentile of DP amplitudes from the hearing impaired population. The study defined hearing impaired as a hearing threshold of 25 dB or greater. The authors concluded that an individual with DP amplitudes at or above the blue lines probably has normal hearing because very few hearing impaired individuals produce amplitudes this large.

The green lines represent the 10th and the 5th percentile of DP amplitudes from a normal hearing group. The authors concluded that an individual with DP amplitudes at or below the green lines probably has cochlear damage (assuming normal middle ear function) because few people with normal cochlear function produce DP amplitudes this small.

The area between the bottom green line and the top blue line represents the overlap between the two populations. Because this area includes some normal hearing individuals and some hearing impaired individuals, the results are inconclusive. When interpreting DPOAE data, considering the DP-NF difference value as well as the DP amplitude is important. If necessary, refer to the published article for more information.

Expanded Boys Town 65-55 Reference Set

	Hearing Impaired		Normal Hearing	
F2 Frequency	95th Percentile	90th Percentile	10th Percentile	5th Percentile
8000	-9.97 dB SPL	-12.85 dB SPL	-22.20 dB SPL	-26.00 dB SPL
6000	-2.08 dB SPL	-6.88 dB SPL	-7.84 dB SPL	-11.00 dB SPL
4000	0.18 dB SPL	-4.42 dB SPL	-5.93 dB SPL	-9.23 dB SPL
3000	-2.30 dB SPL	-5.55 dB SPL	-11.50 dB SPL	-16.25 dB SPL
2000	-0.90 dB SPL	-3.50 dB SPL	-9.85 dB SPL	-13.90 dB SPL
1500	3.83 dB SPL	0.43 dB SPL	-6.73 dB SPL	-9.80 dB SPL
1000	7.65 dB SPL	4.40 dB SPL	-8.10 dB SPL	-12.05 dB SPL
750	5.95 dB SPL	2.40 dB SPL	-10.40 dB SPL	-13.60 dB SP

Copyright © 2003-2004
Bio-Logic Systems Corp

The DP Reference Data set

A DP Reference Data set is data from a published research performed on a Bio-logic DPOAE system. Users can display any of these data sets on the DP-Gram as a reference for interpreting patient data. Bio-logic includes six data sets in the Scout Sport software. Users can save the reference set display as a part of the protocol description to activate the reference data set automatically whenever they select the protocol and the data the test collects is appropriate for the reference file.

Copyright © 2003-2004
Bio-Logic Systems Corp

Program Symbols and Abbreviations

The table lists the symbols that appear on the Scout program screen, in this Scout Sport User's Manual, or in the On-line Help topics. Each symbol represents a protocol parameter for the Scout program. For additional information on how the listed items function in the Scout program, turn to the Related Topics that follow the table.

Symbol	Definition
F1	frequency (Hz) of the lower frequency primary tone
F2	frequency (Hz) of the higher frequency primary tone
FDP	frequency (Hz) of the distortion product (DP)
L1	intensity (dB) of the lower frequency primary tone
L2	intensity (dB) of the higher frequency primary tone
DP	intensity (dB) of the distortion product (DP)
NF	intensity (dB) of the noise floor (NF)
GM	geometric mean frequency (Hz) of F1 and F2
TE	intensity of the transient emission
repro	reproducibility (expressed in percent) of the TE data collected in two separate buffers
mPa	milliPascals: a pressure measurement
Stab.	stability of stimulus over time (expressed in percent)

Related Topics:

Display Screen Layouts

Collection Parameter Descriptions

The Display Parameter item

The Advanced Parameters item

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

REFERENCES

1. Gorga, M. P., Neely, S.T., Ohlrich, B., Hoover, B., Redner, J. and Peters, Jo. (1997). "From laboratory to clinic: a large scale study of distortion product otoacoustic emissions in ears with normal hearing and ears with hearing loss." Ear & Hearing, 18, 440-455.

2. Gorga, M. P., Stover, L., Neely, S.T. (1996). "The use of cumulative distributions to determine critical values and levels of confidence for clinical distortion product otoacoustic emission measurements." J. Acoust. Soc. Am. 100, 968-977.

Copyright © 2003-2004
Bio-Logic Systems Corp

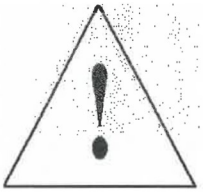
Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

Appendix A

Precautions and Safety Instructions



WARNING

Equipment that supports this program must be designed to meet all applicable medical equipment standards for patient isolation and electrical safety. Bio-logic Systems Corp assumes no responsibility for the equipment into which this program is installed, or for errors and omissions made during the installation process. It is the installer's responsibility to insure the finished system meets appropriate equipment standards, such as IEC 60601, BS 5724, and UL2601.

WARNING

Never place powered equipment (that is, equipment that operates with a electric power source) on any flammable surface. Avoid this whether the equipment is active or not.

IMPORTANT

This device is intended for use by qualified personnel only. Please read this section and the rest of the Scout Sport System's User's and Service Manual before installing any of the Scout Sport System hardware, then retain this section as a reference while operating, transporting, storing or re-installing the Scout Sport System equipment.

Copyright © 2003-2004
Bio-Logic Systems Corp

Equipment Identification Label and Markings

Classification

The International Electrotechnical Commission classifies electro-medical equipment according to its power source (external or internal) and the degree of protection it provided against shock. The Scout Sport System is classified as Class II, Type BF, which means it qualifies as externally powered equipment capable of protecting a patient from electrical shock, provided electrical parts, such as electrodes, have been applied to the patient.

Warning Labels and Symbols

Symbols are often used on equipment in preference to words in order to simplify language differences and to provide instant comprehension of warnings and markings in a restricted space. The following symbols appear on Scout Sport System equipment or in the Scout Sport System User's and Service Manual.

Attention, consult accompanying documents

Type BF equipment

Copyright © 2003-2004
Bio-Logic Systems Corp

Electrical Installation Requirements

All system equipment must be installed at a properly grounded site. This section gives detailed information on how to ensure the installation site meets all necessary requirements.

Grounding Requirements

The desired installation site must have a grounding wire for electrically connecting the system equipment to a properly grounded terminal (Earth). The grounded terminal shall be connected to the steel skeleton or under the main reinforcing steel with any multiple grounding wires grounded at the same point. (One point grounding.) The shield room or bed must also be grounded at the same grounding terminal as the installation site.

Power Plug Requirements

Use only the following power plug configurations.

- A 3-pin power plug requires a 3-pin wall socket with a properly installed grounding pole. Verify the wall receptacle is correctly grounded before inserting the 3-pin power plug.

Copyright © 2003-2004
Bio-Logic Systems Corp

- A 2-pin/3-pin adapter for connecting 3-pin power supply plugs into a 2-pin wall socket. The grounding terminal on the adapter must be fixed with the free end secured to the ground terminal.

- A 2-pin power plug with a grounding terminal for a 2-pin wall socket. The grounding terminal on the power plug must be secured to the ground terminal.

Types of Hospital Facility Groundings

Use the following information to verify the installation site has the appropriate grounding.

Grounding Resistance	The ground resistance of grounding poles connected to medical equipment must be 10 ohms or less.
Protective Grounding	Protective grounding must be provided for patient safety to let the leak current flow into the ground.
Functional Grounding	This type of grounding is not a requirement for patient safety, but will help to eliminate hums.

Hazards of Improper Electrical Installations

Improper electrical installations can cause electrical shock to either the patient or user. It can also damage system equipment under a fault condition. Ensure patient electrodes do NOT come into contact with any conductive material, including the grounded chassis of the computer.

Copyright © 2003-2004
Bio-Logic Systems Corp

Environmental Specifications

Temperature

Operating: 15 to 40° C

Storage and transportation: -20 to 70° C

Humidity

Operating: 15% to 95% at 40° C non-condensing

Storage and transportation: 90% at 65° C

Note: These are maximums. They are not "normal" operating or storage conditions.

Condensation

Recovery Time after condensation to operations specifications: 24 hours

Flammability

UL94 HB
UL94V-O

EMC Specifications

Radiated Emissions: CISPR 11/EN55011: 1991 Group 1 Class B

Conducted Emissions: CISPR 11/EN55011: 1991 Group 1 Class B

Electrostatic Discharge Immunity: IEC 801-2: 1991

Radiated RF Immunity: IEC 801-3: 1991

Fast Transient / Burst Immunity: IEC 801-4: 1988

Surge Immunity: IEC 801-5

Copyright © 2003-2004
Bio-Logic Systems Corp

Installation Precautions

Use the following precautions when installing or re-installing Scout Sport System equipment.

WARNING

Never turn power on or off with a patient connected to the system. Only qualified personnel should use this device. Please read this section before installing any of the hardware. Refer to this section when you operate, transport, store, or re-install the system.

WARNING

Make sure that any platform, table, cart, or other surface used during the operation, transport, or temporary or permanent storage of the system and its components is adequate, sturdy, and safe. Bio-logic Systems Corp. is not responsible for any injury or damage that may result from inadequate, poorly constructed, or unapproved transports, carts, operating surfaces.

WARNING

Never use equipment that has parts missing or equipment that might contain loose parts inside of it (that is, inside an enclosed portion of the equipment). If you suspect a piece of equipment has missing or loose parts, make contact with Bio-logic System Corp.

WARNING

Never place powered equipment (that is, equipment that operates with a electric power source) on any flammable surface. Avoid this whether the equipment is active or not.

Copyright © 2003-2004
Bio-Logic Systems Corp

WARNING

Make sure that your system is plugged into the Bio-logic Systems Corp Isolation transformer or runs on battery power BEFORE you use the computer in a patient environment.

Environmental Conditions

- Select a room with properly grounded power sources.
- Do not use or store Scout Sport systems and equipment in places where chemicals are stored or where there is a potential for gas leakage.
- Avoid moisture or contact with water, extreme atmospheric pressure, excessive humidity and temperature, poorly ventilated areas and dusty, saline or sulfuric air.
- Verify the selected site maintains a relative humidity between 25% and 95% (without condensation).
- Verify all conditions meet the requirements listed in the Environmental Specifications section of this manual.

Room Topography

- Place all equipment on an even, level surface. Avoid the potential for mechanical shock or possible vibrations during setup system operation or when relocating the equipment.
- Verify the iso-transformer and all portable multiple socket-outlets are off the floor and in a dry location.

Copyright © 2003-2004
Bio-Logic Systems Corp

Installing the Scout Sport system

See the Installation section of this document.

Software Installation

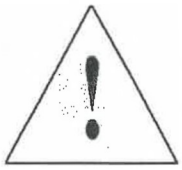
See the Software Installation section of this document.

Hardware Installation

See the Hardware Installation section of this document.

Copyright © 2003-2004
Bio-Logic Systems Corp

System Hookups



WARNING

Only use the Power Supply Model Number 520-PS12D3 or 520-PS6V4A (depending on NAVPRO model) with the Scout Sport system.

- Verify the system computer power supply (if present) is plugged into either:
  —an iso-transformer from the 520-XFS family of Iso-transformers

  OR

  —a 520-AMPS01 iso-transformer.

- Verify the maximum load for any multiple portable socket-outlet:
  —does not exceed 750 VA for the 520-XFS family of Iso-transformers
  —does not exceed 100 VA for the 520-AMPS01

- Do NOT use the multiple socket-outlets to power any equipment that isn't a part of the Scout Sport System. (Adding other equipment may increase the current amount of leakage and exceed the safety limit.)

- Do not interconnect multiple pieces of equipment without verifying that the sum of all leakage currents does not exceed the safety limit.

- Do not connect non-medical electrical equipment directly to a wall outlet if the Scout Sport System is using a multiple, portable socket-outlet with a separating iso-transformer. (The additional equipment may increase the current amount of leakage and exceed the safety limit.)

- Do not connect equipment, which can potentially provide electromagnetic or other types of interference. This may cause the Scout Sport System equipment to function incorrectly.

- Verify the equipment is connected to a power line source with the following frequency, voltage and current capacity.

Frequency:	50 / 60 Hz
Voltage:	100 – 240 VAC
Current Capacity:	15 Amps min.

- Use only Ink Jet printers for Scout Sport System setups that use the Scout Sport System isolation transformer.

Copyright © 2003-2004
Bio-Logic Systems Corp

Installation Verification

Use the following to verify all equipment is correctly installed before use.

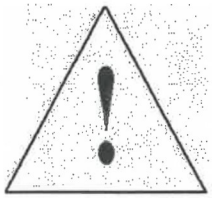
- Verify all equipment and cables are undamaged and in good working condition.
- Verify all equipment and cables are connected according to the instructions in this manual.
- Verify unauthorized equipment is not connected to the system.
- Verify the equipment is properly grounded.
- Verify all circuitry with a direct connection to the patient has been checked twice.
- Verify all system or equipment batteries show the correct voltage and are in perfect working condition.

System Diagnostic and Verification Tests

Before connecting the patient to the system equipment, perform all required system diagnostic tests described in this Scout Sport System User's and Service Manual. All tests must pass.

Copyright © 2003-2004
Bio-Logic Systems Corp

Precautions During System Operation



WARNING

Never turn power on or off with a patient connected to the system. Only qualified personnel should use this device. Please read this section before installing any of the hardware. Refer to this section when you operate, transport, store, or re-install the system.

WARNING

All of the disposable supplies from Bio-logic Systems Corp. that are coupled to the scalp are latex-free and comprised of hypoallergenic material. Bio-logic is not responsible for disposable items purchased from another vendor. Carefully read and follow the proper use instructions that accompany any disposable items.

WARNING

Make sure that any platform, table, cart, or other surface used during the operation, transport, or temporary or permanent storage of the system and its components is adequate, sturdy, and safe. Bio-logic Systems Corp. is not responsible for any injury or damage that may result from inadequate, poorly constructed, or unapproved transports, carts, operating surfaces.

WARNING

Never use equipment that has parts missing or equipment that might contain loose parts inside of it (that is, inside an enclosed portion of the equipment). If you suspect a piece of equipment has missing or loose parts, make contact with Bio-logic System Corp.

Copyright © 2003-2004
Bio-Logic Systems Corp

WARNING

Never place powered equipment (that is, equipment that operates with a electric power source) on any flammable surface. Avoid this whether the equipment is active or not.

WARNING

This equipment is not protected from a cardiac defibrillator discharge. Using a defibrillator while a patient is connected to the system equipment may permanently damage the equipment.

1. Follow all safety procedures, giving careful and constant attention to the patient and system equipment.
2. Follow hospital procedures to validate all electrodes are properly applied in order to prevent patient burns while using electro-surgical equipment.
3. Turn the system power on BEFORE you attach electrodes to the patient. Remove the electrodes from the patient BEFORE you turn the system power off. This avoids shock hazards from power surges.
4. Attach electrodes to the patient and the system hardware so that the electrode cables can neither entangle nor strangle the patient.
5. Avoid direct contact between the patient and system equipment at all times.
6. Do not add other equipment that is not protected against ingress of liquids.
7. This equipment is not suitable for use in areas of flammable or anesthetic mixture.

Signal Output and Input

The system computer must NOT be used in a patient environment unless one of the following conditions are met:

1. The system computer and all other peripheral devices are plugged into the isolation transformer.
2. The portable computer is powered by batteries. It does not plug into a wall outlet. No AC-powered peripherals except the Scout Sport System module connect to the portable computer.
3. The system computer has an isolated power supply.

Care and Maintenance

This section gives users information on maintaining and caring for Scout Sport System.

Copyright © 2003-2004
Bio-Logic Systems Corp

Cleaning

No special cleaning is required for this device. Ordinary, 'house-keeping' type cleaning to prevent the accumulation of dust or debris is adequate.

Inspection

No special inspection prcedures are required for this device.

Disassembly and Storage

The Scout Sport System equipment requires careful handling during disassembly and storage.

1. Return all controls to their original positions and turn OFF all system equipment.
2. Carefully remove all connecting cables without using force.
3. Follow designated hospital procedures to clean Scout Sport System equipment.

Maintenance

Scout Sport System equipment requires professional maintenance and repair service. Never attempt to alter, modify or repair this equipment alone.

1. If the Scout Sport System equipment is not functioning correctly, mark all defective parts clearly to prevent accidental use before the appropriate repairs can be made.
2. When using a defibrillator, either protect the equipment against defibrillator discharge or remove all patient cables and/or transducers to avoid system damage.

Copyright © 2003-2004
Bio-Logic Systems Corp

Appendix B

Electrical Requirements

Use the following requirements to avoid noise interference while recording activity from patients and to ensure a consistent electrical environment for the computer system.

WARNING

Never turn power on or off with a patient connected to the system. Only qualified personnel should use this device. Please read this section before installing any of the hardware. Refer to this section when you operate, transport, store, or re-install the system.

WARNING

Never place powered equipment (that is, equipment that operates with a electric power source) on any flammable surface. Avoid this whether the equipment is active or not.

Isolated or non-isolated power

Although Scout Sport Systems will function with non-isolated power, Bio-logic prefers isolated power for maximum efficiency and safety.

15 or 20 amps

Although 15 amps is acceptable in smaller systems, a 20-amp service is preferable anytime the system in use has a large amount of features.

BTU Offset

Bio-logic Systems Corp. computer systems release a maximum of 2000 BTU per hour.

Magnetic Field

Bio-logic computer systems should operate without any interference in a magnetic field of 0.05 Gauss.

Room Shielding

Although Bio-logic recommends room shielding, it is not absolutely required. Users may elect to shield the room if the location is close to noise-generating equipment and should provide shielding if there are potential noise level problems.

Copyright © 2003-2004
Bio-Logic Systems Corp

Fluorescent Lights

Although the Scout Sport System works in a room with fluorescent lighting, incandescent lighting is preferred. Also, dimmer switches can produce noise interference unless the switch is set at a full position.

Thickness of the Conduit

The thickness of the conduit and all electrical installations must meet the National Electrical Code and applicable local codes.

Copyright © 2003-2004
Bio-Logic Systems Corp

Notes

Use this page for your own notes.

Copyright © 2003-2004
Bio-Logic Systems Corp

INDEX

A

About Scout 136, 189
Advanced Parameters 52, 58, 59, 155, 156, 158, 162, 166
Advanced Setup Parameters display 166
Analysis 40, 41, 76, 80, 82, 84, 112, 132, 136, 158, 160, 187
artifact rejection 24, 167
ASCII file format descriptions 203
AuDX Plus.....5, 87, 128, 153, 201
Auto Detect command button 182
Autoscale Frequency checkbox.....159
autoscaling option.....159
averaging time 47, 84, 165
  --examples.....165

B

Bar Plot spectral data checkbox.....159
Begin.....152
Begin Collection item.....152
Birthdate field..... 143, 146
Boys Town 111, 208, 209

C

cable connection..... 87, 153
Calibration phase.....68, 117, 132, 190
Calibration Stimulus Waveform.....132, 190, 191
Cancel command button.....63, 65, 142, 143, 147, 156, 161, 165, 167, 183
Channel A and Channel B calibration.....202
Channel A calibration.....201
Channel B calibration..... 201, 202
Close Patient File 77, 137
Collate checkbox.....149
Collection menu 35, 136, 152
Collection Parameters.....44, 47, 58, 59, 155, 156, 158, 162, 166
Collection Setup Parameters Display 162
color coding.....3
Comment field..... 143, 147
Communication Fault message 117
Communications Port field.....182
communications ports.....182
Component 140, 141, 142, 143, 146, 147, 149, 156, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 181, 182, 183, 184, 185
Computer System
  --requirements 129
Condensation..... 127
Customer Support..... 1, 3

D

Data Format Type field..... 53, 166
data point..... 80, 81, 83, 132, 141, 164, 165, 195
Decibel Range (dB) field..... 159
Default Protocol 57, 155, 178
Display Parameters..... 40, 58, 59, 82, 112, 155, 156, 158, 162, 166
disposable ear tips 15, 128
  --Bio-logic 128
disposable items 225
Distortion Product.....81, 132, 133, 159, 192, 197
DP Amplitude 160, 164, 165, 199
DP amplitude range..... 133, 199
DP and NF amplitudes..... 160, 208
DP deviation..... 114, 203
DP Frequency 53, 166, 167
DP measurement..... 163
DP reference data 203, 208
DP Reference Data set 210
DP response amplitude 163
DP test..... 132
DP-gram..112, 114, 133, 160, 196, 197, 199, 203, 210
DP-Gram..69, 79, 80, 81, 83, 112, 141, 160, 161, 164, 165, 167, 203
DP-gram..... 112, 160
DPOAE test stimuli.....35, 68, 152
DPOAE testing 35, 68, 132, 152, 190

E

ear canal 8, 14, 15, 16, 35, 68, 69, 117, 127, 132, 133, 152, 192, 199
Ear radio buttons 143
ear tips.....15, 16, 130
EMC specifications 127
Evoked Potential System..... 127
Exit.....18, 85, 138

Copyright © 2003-2004
Bio-Logic Systems Corp

F

F1 Intensity....132, 133, 192, 197
F2 Frequency.... 46, 160, 204, 205, 206, 207, 208, 209
F2 Intensity....132, 133, 192, 197
F2/F1 ratio field....163
File menu....77, 136, 137, 186
File name field....67, 141
filename....70, 84, 89, 90, 115, 144, 203
First Name field....143, 146
Flammability....127
frequency....35, 46, 68, 69, 81, 114, 132, 133, 152, 158, 159, 161, 163, 164, 165, 167, 192, 195, 199, 203, 208, 211
Frequency and Levels area....163
Frequency Begin (HZ) field....163
Frequency End (HZ) field....163

G

Graphics....196

H

hardware....220, 225, 228
Hardware Installation....2
Help menu....136, 189
Help Topics....136, 189
High Pass Response Filtering....167
HPF Frequency....166, 167
HPF Type....166, 167
Humidity....127

I

icons....25, 131, 186
identification code....143, 146
Information Window....139, 195
inner ear....127
install a new ear tip
--operations
Biologic probe....7, 10
installation....215
isolation transformer....129, 223, 226

K

keyboard....22, 41, 43, 45, 50, 53, 56, 65, 67, 112, 136

L

L1
-values..35, 46, 81, 91, 95, 112, 114, 132, 133, 161, 163, 192, 197, 203, 204, 205, 206, 207, 211
L1 Level dB field....163
L2
--values....35, 46, 81, 91, 95, 112, 114, 132, 133, 161, 163, 192, 197, 203, 204, 205, 206, 207, 211
Last name field....62, 143,142, 146
LCD Messages....201
List of files....141
List of protocols....156, 162
Look in: field....140

M

Main Menus....25, 35, 39, 40, 41, 44, 45, 52, 57, 58, 59, 60, 62, 64, 66, 68, 70, 72, 74, 76, 77, 82, 87, 111, 131, 136, 137, 152, 154, 187, 188, 189
Microphone....182
Microphone Correction field....182
Minimum # Samples....47, 165
mouse....17, 18, 19, 20, 21, 26, 27, 45, 52, 53, 62, 65, 81, 83, 87, 112, 136, 151, 186, 196
--operations
how to use....17
Multiple File Selection View radio buttons....141

N

New Patient File....62, 137, 139, 186
New Patient File item.
--description....139
NF Amplitude....199
NF amplitude range....133, 199
NF deviation....114, 203
NF reference data....203
Noise Floor....81, 91, 95, 133, 164, 165, 197
noise measurement....167
Noise Side Bands field....167

O

OK command button....32, 45, 53, 57, 58, 59, 75, 143, 147, 156, 161, 165, 167, 183
On-Line Help....189
Open command button....142
Open Patient Data File display....137, 186
Open Patient File....66, 137, 140, 186
Open Scout Patient Data File
--description....140
Open Scout Patient Data File display....66, 140
Open Windows list....188
Operating....127

Copyright © 2003-2004
Bio-Logic Systems Corp

Operating System
--requirements....129
otoacoustic....69, 127, 132, 192, 204, 205, 206, 207, 213

P

Page Through command buttons....200
Path command button....140, 141
Patient ID field....143, 146
Patient Information....62, 64, 84, 136, 137, 142, 143, 152
patient's left ear.
--start test icon....186
patient's right ear.
--start test icon....186
Plot Symbol....197
Point Time Limit....46, 164, 165
Points per Octave field....163
Practice Information....155, 181
pre-test calibration....35, 152
Print item....148, 150, 186
Print Preview....72, 136, 138, 150
Print range area
--print dialog box....149
Print range data fields....149
Print to file checkbox
--print dialog box....149
printer....72, 74, 75, 76, 128, 148, 149
Printing Devices....129
Prompt before exit checkbox....183
Properties....30, 32
Protocol name....59, 162
Protocol Name field....162

Q

question mark
--help cursor....186

R

Ratio....91, 95, 114, 203
Reference data file....161, 203
Reference data files....114, 161
Reference Data list....161
Reference Data menu....203
Rejection Threshold (mPa) field....167
Reset Hardware....87, 88, 152, 153
Reset Hardware item....153
Response Spectrum....198
response spectrum display....159
response spectrum graph....158, 159

S

S/N Ratio....164, 165
Sample size
--examples....163
Sample Size....47, 165, 167
Sample Size field....165
Save path as default data file path checkbox....141
Save Protocol....45, 58, 59, 155, 179
Save Test Data....70, 137, 144, 186
Scout Display Setup screen....112, 158
Scout Sport....1, 2, 5, 6, 8, 13, 24, 29, 87, 91, 95, 111, 117, 118, 127, 128, 153, 166, 190, 201, 203, 210, 211
Search button....67, 142
Search command button....142
Search Last Name....67, 142
Search Last name controls....142
Select Protocol
item....39, 57, 58, 59, 155, 156, 162, 179
serial cable....4, 5, 87, 117, 153
serial port....4, 87, 153
Setup menu....40, 82, 136, 154, 155
Show all command button....142
Show splash screen on startup checkbox....183, 184
Software Installation....1, 222
Spectrum Ranges area....158, 159
splash screen....183
Status Bar....60, 155, 184
stimulus level plot....160
Stimulus Spectrum....133, 199
Storage....127
supplies....225
System (setup)....155, 182
system peripherals....155, 182
System Setup dialog box....182

T

Temperature....127
temporal waveform....35, 132, 133, 152, 190, 196
Testing Infants and Newborns
--operations....14
Time Zone....32
Toolbar....25, 131, 155, 186

U

UL Compliance....129
Upper Frequency Limit (kHZ) field....158

Copyright © 2003-2004
Bio-Logic Systems Corp

V

Vanderbilt.....111, 114, 203, 204, 205, 206, 207

W

width of frequency
--examples 167
Window menu 136, 188
Windows 137, 138, 140, 141, 150, 186, 188

Copyright © 2003-2004
Bio-Logic Systems Corp